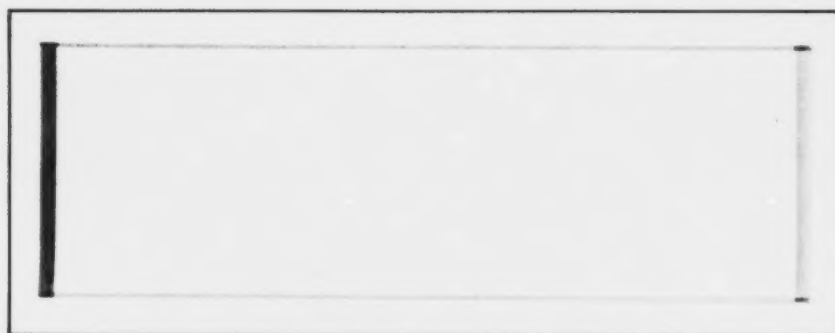




**Agriculture
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WORKING PAPER

Marketing and Economics Branch

**Direction générale de la commercialisation
et de l'économie**

Working papers are (1) interim reports completed by the staff of the Marketing & Economics Branch, and (2) research reports completed under contract. The former reports have received limited review, and are circulated for discussion and comment. Views expressed in these papers are those of the author(s) and do not necessarily represent those of Agriculture Canada.

TRADE CENTRE VIABILITY IN THE PRAIRIE REGION
1961-1981

(Working Paper 8/85)

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PREFACE

The rural trade centre system in the Prairie provinces experienced a major transformation during the past three decades. Until into the 1970s at least, larger centres grew rapidly, gaining a growing share of the region's population and conducting a larger proportion of the region's business. Smaller centres declined. Their market areas shrank and number of business firms decreased.

Prior to the initiation of this study several years had passed since a major baseline analysis of the evolution of the trade centre system, and the factors influencing its evolution, had been conducted. During this period several changes in the grain handling and transportation network had occurred. Several hundred miles of branch lines had been abandoned and numerous country elevators had been closed. It was not known what effect, if any, these alterations had had on the communities from which they were withdrawn. The phasing out of the Crow's Nest Pass freight rate and the attendant discussion of the various alternative methods of payment promised to raise new questions, and revive some old ones, regarding the viability of rural trade centres, how they had been affected by past changes and what the consequences of recent and impending changes might be. The time for a current analysis of the rural trade centre system was appropriate.

Two major objectives were established for this study. The first was to trace the evolution of rural trade centres on a Prairie-wide, provincial basis, through the various phases they have passed from 1961

through 1981. These dates were chosen because they coincided with the national censuses conducted in these years which produced the data necessary for the required analysis. The relative importance of major influences responsible for the changes noted were to be identified and assessed.

The second component of the study was to evaluate the likely future effects on rural communities of the factors responsible for the reorganization of the system during the past. This evaluation would provide a type of base-line projection against which the effects of anticipated future changes could either be inferred or systematically investigated by users of these results.

The analysis was to be conducted at both a macro and a micro level. The macro study would include the rural trade centre system in the three Prairie provinces. The parallel micro study was to consist of case studies of selected groups of communities such as those that had lost rail and/or elevators between 1961 and 1971 and those that had lost these facilities between 1971 and 1981.

One final study was to be conducted. This was an analysis of the impact of various alternative methods of payment on the small communities serving the agricultural sector in Saskatchewan. The results of this analysis are reported in an Addendum which follows the main body of the study.

This report is organized into five chapters and an addendum. The first chapter briefly summarizes previous studies of small communities in the Prairie region. In Chapter 2 an overview is provided of the pattern of changes in population and business outlets in Prairie

communities by size group between 1961 and 1981. The experience of communities losing rail lines and/or elevators is analyzed in Chapter 3. In Chapter 4 a functional analysis is presented of changes in trade centre status of small communities in the three provinces between 1961 and 1981. Chapter 5 is devoted to an assessment of the causes of changes in population and trade centre status of small communities described in the first four chapters. Finally, as previously mentioned, the Addendum follows.

SUMMARY OF FINDINGS AND CONCLUSIONS

1. The migration of population from rural areas in the Prairie provinces which has been observed since at least the beginning of the 1940s continued through the 1960s. During the 1970s, however, this migration slowed and then reversed itself in Alberta and Manitoba. Migration from rural areas continued in Saskatchewan through the 1970s but at a greatly reduced rate.

2. Small communities which had declined during the period in which rural population migration was high appeared, from macro statistics, to revive during the 1970s. Population growth became positive and it appeared that there was also an increase in number of business outlets.

3. Disaggregation of communities within size groups by types of location revealed that small communities near major cities experienced rapid gains in both population and business outlets during the 1970s. Communities situated on branch lines that had been identified by the Grain's Group in the early 1970s as candidates for abandonment, but which in fact have retained rail and elevator facilities, continued to decline. Further, detailed investigation of the types of businesses in small communities indicated that the apparent gain in number of outlets during the 1970s was largely a statistical illusion. Services to consumers and producers continued to decline. The apparent gain was largely the result of firms in agriculture, construction and

transportation which had existed in the area being newly listed in the statistical source.

4. Approximately 100 communities which lost rail lines and/or elevators during the 1960s and 1970s were compared with like centres retaining these facilities. In the majority of the group by group comparisons, centres losing rail lines and/or elevators were somewhat better at retaining population and/or business outlets than were the communities with which they were compared. It was not possible to conclude that removal of branch lines and/or elevators has had a systematic observable impact on communities from which they were withdrawn.

5. Analysis of the trade centre status of small communities between 1961 and 1981 revealed that, although population decline has been arrested or even reversed, the trade centre status of the great majority of centres continued to decline.

6. Most of the factors historically contributing to the decline of rural communities appear to have either run their course or to have at least subsided temporarily. The consolidation in agriculture slowed to a virtual stop in the late 1970s or early 1980s. Centralization of schools, communications and transportation systems have been completed. The full impact of a greatly improved intercity highway network has also probably been realized.

7. In the absence of a resumption of consolidation in agriculture, the trade centre system now in place will probably not

change very much during the next 10 years. A resumption of agricultural consolidation, however, would likely produce some additional decline in the smallest communities. Some uncertainty with respect to the viability of small communities surrounds the question of variable freight rates. The possible patterns of abandonment occasioned by the widespread use of variable rates would differ from anything yet experienced. It is too early to know what the implications of such an event would be.

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CHAPTER 1

TRADE CENTRE CHANGE IN THE PRAIRIE REGION: A BRIEF REVIEW

The small communities that dot the Prairie landscape came into existence to serve the needs of the people who originally transformed these plains from grasslands into grain fields and cattle ranches. The spatial pattern of the trade centre system that developed during the settlement era reflected the production, transport and distribution technology of the early 20th century.

Little did the settlers and developers realize that even as the occupation of the Prairies was nearing completion, technological advances were being made that would render obsolete the system that they had built. Only the depression of the 1930s and the Second World War postponed a secular adjustment that would have otherwise begun just as the settlement phase ended.

Adoption and implementation of new technologies accelerated during the 1940s and has continued to the present with only occasional and temporary interruptions. The impact of the new technologies fell most heavily on activities conducted in rural settings and consequently on the communities that served rural industries and consumers. Important in this respect were the developments that led to substitution of capital for labour in agriculture, rail and communications industries; the consolidation of farms into larger holdings; and the concentration of wholesaling, selected retailing activities, schools and hospitals

into larger units in fewer locations.

The rural trade centre system adapted to these changes. Smaller communities declined while the larger, centrally located, rural communities prospered from the consolidation process and expanded. Rural dwellers, as consumers, contributed to the pattern of concentration. As paved roads were extended into all regions in the Prairies, shopping patterns shifted from the closest rural community to regional shopping centres where more stores, greater variety and sometimes better quality and lower prices were available.

Changes in the structures of Prairie trade centre systems for earlier periods have been reported elsewhere. The most comprehensive of these studies was one conducted by Gerald Hodge in which he analyzed changes in Saskatchewan's trade centre system between 1941 and 1961.¹ A part of Hodge's study involved classifying centres into seven functional categories for these two years and identifying and analyzing the patterns of change recorded. The classification scheme used was one in which descriptive names identify in a general way the functional status of communities as trade centres. Thus Hamlets, Minimum and Full Convenience centres are typically small communities which provide only

¹Gerald Hodge, "The Prediction of Trade Center Viability in the Great Plains," Papers of the Regional Science Association 15 (1965), 87-115. Another relatively comprehensive study of Saskatchewan is found in Saskatchewan, Royal Commission on Agriculture and Rural Life, Movement of Farm People, Report No. 7, and Service Centres, Report No. 12 (Regina: Queen's Printer, 1956). Analysis of the adjacent area in the United States is contained in John R. Borchert, The Urbanization of the Upper Midwest: 1930-1960, Report No. 2, and John R. Borchert and R. B. Adams, Trade Centers and Trade Areas of the Upper Midwest, Report No. 3 (Minneapolis: Upper Midwest Economic Study, 1963).

TABLE 1-1 CHANGES IN THE PROPORTION OF TRADE CENTERS AMONG CLASSES, SASKATCHEWAN, 1941-61

Class of Center 1941	Class of Centre in 1961						
	Expired by 1961	Hamlet	Min. Conv.	Full. Conv.	Part. Shop.	Comp. Shop.	Sec. W-R Prim. W-R
(percentages)							
New Centre (1942-51)	48	52					
Hamlet	46	52	02				
Min. Conv.	02	63	27	07	01		
Full Conv.		06	28	39	26	01	
Part. Shop.			02	19	63	16	
Compl. Shop.					12	73	15
Secondary W-R							100
Primary W-R							100

the most basic consumer services. Partial and Complete Shopping Centres offer most everyday services while Secondary and Primary Wholesale-Retail Centres provide a full range of services and supply lower order centres in the hierarchy. Hodge's major observations were:

1. Between 1941 and 1961 the number of centres at both extremes of the retail service hierarchy increased relative to centres in the middle range of the hierarchy. In other words, above a minimum critical threshold the common experience was growth while below that threshold decline was common. Table 1-1, reproduced from Hodge's study, explicitly identifies this pattern.
2. As a result of the pattern of change identified above, the distance between higher order trade centres decreased as their ranks were augmented through the growth of centres above the Full

TABLE 1-2 CHARACTERISTIC SPACING WITHIN TRADE CENTRE CLASSES, SASKATCHEWAN, 1941 AND 1961

Type of Centre	1941	1961	Percent Change 1941-61
(miles apart)			
Primary Wholesale-Retail	144	144	—
Secondary Wholesale-Retail	119.8	67.5	-43.7
Complete Shopping	40.4	39.5	- 2.2
Partial Shopping	25.9	22.5	-13.5
Full Convenience	15.4	19.8	+22.2
Minimum Convenience	10.3	13.5	+31.1
Hamlet	9.1	9.6	+ 5.5

Convenience Centre category. The distance between centres in the lower three categories increased as Full Convenience and Minimum Convenience Centres declined to lower status and Hamlets expired. Table 1-2, also reproduced from Hodge's work, illustrates these changes in spacing.

3. The rate of decline of small trade centres between 1941 and 1961 increased with increasing proximity to larger centres. The bedroom community phenomenon had not yet emerged and smaller centres located within 15 miles of a larger centre declined at much faster rates than those more remotely situated.

At a very general level some of the major trends characterizing the 1941-1961 period continued through the 1960s. In all three Prairie provinces growth was a common experience for centres above a minimum critical threshold while decline was the common experience below this threshold. Tables 1-3 and 1-4 are reproduced from a study of that

TABLE 1-3 POPULATION DISTRIBUTION, PRAIRIE CENTRES,¹
GROUPED BY 1961 SIZE CLASSIFICATION
1961 and 1971²

Population Class	No. of Centres	Average Population		Population Distribution					
		1961	1971	1961			1971		
				Total	%	Cum.	Total	%	Cum.
< 200	215	120	101	25,888	1.3	1.3	21,618	0.9	0.9
200- 499	291	331	334	96,401	4.9	6.2	97,294	4.0	4.9
500- 999	145	694	754	100,631	5.1	11.3	109,358	4.5	9.4
1,000- 2,499	91	1,569	1,892	142,789	7.2	18.5	172,149	7.1	16.5
2,500- 4,999	35	3,189	4,145	111,600	5.7	24.2	145,086	6.0	22.5
5,000-14,999	13	8,839	10,227	114,906	5.8	30.0	132,947	5.5	28.0
15,000-49,999	6	27,515	31,146	165,090	8.4	38.4	186,877	7.7	35.7
50,000 +	5	243,412	310,328	1,217,062	61.6	100.0	1,551,639	64.2	99.9
Totals:				1,974,367	100.0		2,416,968	99.9	

1.uj on

¹Centres incorporated in both 1961 and 1971 for which data were available for both dates.

²In Tables 1-3 and 1-4 Bowness, Forest Lawn and Montgomery are included with Calgary; Beverly and Jasper Place with Edmonton; and Brookland, St. Boniface, St. James, Transcona, Tuxedo, and East and West Kildonan with Winnipeg.

TABLE 1-4 DISTRIBUTION OF BUSINESS OUTLETS,¹ PRAIRIE CENTRES,²
GROUPED BY 1961 SIZE CLASSIFICATION
1961 and 1972

Population Class	No. of Centres	Distribution of Business Outlets					
		Average Number Business Outlets		1961		1972	
		1961	1972	Total	%	Total	%
< 200	215	6	3	1,229	3.0	726	1.6
200 - 499	291	15	11	4,340	10.5	3,156	7.1
500 - 999	145	27	26	3,948	9.5	3,730	8.4
1,000 - 2,499	91	51	53	4,627	11.1	4,862	11.0
2,500 - 4,999	34	94	110	3,206	7.7	3,731	8.4
5,000 - 14,999	13	195	211	2,535	6.1	2,745	6.2
15,000 - 49,999	6	490	518	2,938	7.1	3,105	7.0
50,000 +	5	3,741	4,440	18,705	45.0	22,201	50.2
Totals:				41,528	100.0	44,256	99.9

¹"Business outlets" as used here refers to commercial outlets. Public and quasi-public organizations are excluded.

²Centres incorporated in both 1961 and 1971 for which data were available for both dates are included.

SOURCE: Dun and Bradstreet, Reference Book, March 1961 and March 1972.

period.² In the region as a whole, as shown in these tables, absolute population decline during the 1960s characterized the smallest size class of communities used in these comparisons while relative population decline was experienced by communities up to 2,500 population. Absolute loss in number of business outlets was experienced by communities up to 1,000 in population and relative decline in business outlets included centres up to 2,500 in population as well.

What the brief review of these studies illustrates is that the process of small community decline, always a topical subject in the Prairie region, has been going on for a very long time and under a variety of macro-economic circumstances.

A great many other studies of cities, towns and urban systems on the Prairies have been conducted of course. Most of these focus on a particular region within a province, cities of a particular size-class, or on commercial or other types of linkages between major cities or between cities and their hinterlands. While all of these studies are interesting in their own right, they are not reviewed here as they do not illustrate the overall trends of an entire urban hierarchy either within one of the Prairie provinces or for the entire Prairie region.

In the following chapter general population trends, by census division, are reviewed for each of the Prairie provinces between 1961 and 1981. This is followed by a comparison of statistics on the change

²Jack C. Stabler, "Regional Economic Change and Regional Spatial Structure: The Evolving Form of the Urban Hierarchy in the Prairie Region," in The Future of Small- and Medium-Sized Communities in the Prairie Region, ed. Barry S. Wellar (Ottawa: Ministry of State for Urban Affairs, 1978).

in population and number of business outlets by community size for the three provinces during the same time period. Thereafter attention is directed to the smaller communities which serve the rural agricultural areas of the Prairie region.

CHAPTER 2
EVOLUTION OF TRADE CENTRE SYSTEMS
IN THE PRAIRIE PROVINCES
1961-1981

SPATIAL DISTRIBUTION OF POPULATION

The migration of people from rural areas which characterized the decades of the 1940s and 1950s continued in much the same way through the 1960s. However, beginning in the 1970s, the rate of out-migration from rural areas slowed. By the mid-1970s rural areas in Alberta were gaining more people than they were losing and, during the latter years of the 1970s, the southern agricultural areas of Manitoba also began to experience an increase in rural population. In Saskatchewan, although the rate of rural de-population had slowed by the latter years of the 1970s, to approximately one-quarter of the rate experienced during the 1960s, outmigration continued.

The numbers in Table 2-1 and the figures on the following pages illustrate these trends by census division for each of the Prairie provinces. Figures 2-1, 2-3 and 2-5 refer to both rural and urban populations of the respective divisions.¹ Figures 2-2, 2-4, and 2-6 refer to rural populations only. Thus the shaded areas of Figure 2-1 identify census divisions in which there was a net population decrease

¹In these comparisons, urban population is defined as that of all incorporated centres while rural is defined as total population less that of incorporated areas.

TABLE 2-1 POPULATION CHANGE, PRAIRIE REGION,
1961-1981

		1961-71	1971-76	1976-81
Manitoba	Urban ¹	106,931	31,982	5,573
	Rural ²	-40,370 (-44,088)	1,337 (- 3,031)	-838 (3,674)
Saskatchewan	Urban ¹	76,886	17,735	53,260
	Rural ²	-80,177 (-80,007)	-22,657 (-23,984)	- 6,270 (- 9,470)
Alberta	Urban ¹	293,720	178,076	346,762
	Rural ²	- 6,257 (-32,737)	32,087 (32,292)	52,925 (44,053)

¹ Urban population is defined as the population of all incorporated places. Rural population is the total population of census divisions less the population of incorporated communities.

² The first figures given is for the entire province. The figure in parentheses refers to the southern agricultural areas only and excludes the following northern census divisions: for Saskatchewan, 18; for Alberta, 12 and 15; for Manitoba, 16 between 1961 and 1971 and 21, 22 and 23 after 1971.

between 1961 and 1971 even after accounting for urban gains. The divisions showing gains (unshaded) were those in the north or those that contained or were adjacent to larger centres. The shaded areas of Figure 2-2, which shows only rural population change between 1961 and 1971, indicates that there was a decrease in the number of rural dwellers even in most of those census divisions which surround major centres and larger secondary centres.

Figures 2-3 and 2-4 refer to the 1971-1976 period and, incidentally, reflect the changes in census division boundaries used for the 1976 census. In general the patterns for Manitoba and Saskatchewan are similar to those for the 1961-71 period. Most census divisions lost population except for those containing or adjacent to major cities or larger secondary centres (Figure 2-3). However, nearly all census divisions, including those with larger urban centres, lost rural population (Figure 2-4). Even so, the numbers in Table 2-1 indicate that the rate of rural population decline slowed substantially in Manitoba and Saskatchewan during the 1970s. For Alberta, the numbers in the table indicate a gain in rural population for the province as a whole. Only two Alberta census divisions actually lost population in total between 1971 and 1976 (Figure 2-3). At the rural level, seven lost population while six gained population (Figure 2-4).

Between 1976 and 1981 the trend of rural population decrease slowed even more. Only Saskatchewan experienced a major rural population loss at the provincial level, as indicated in Table 2-1, and this decline was again smaller than that for previous inter-census periods. Alberta and the southern agricultural areas in Manitoba gained

rural population. At a more detailed level, fewer southern census divisions lost population in total in all provinces (Figure 2-5) while the number losing rural population was also reduced: four in Alberta, eight in Manitoba and 13 in Saskatchewan (Figure 2-6).

**OVERVIEW OF EXPERIENCE OF INCORPORATED CENTRES,
PRAIRIE PROVINCES, 1961-1981**

In 1961 a much smaller proportion of the population of the Prairie provinces lived in urban areas than was the case at the national level or in highly urbanized Ontario, for example. By 1981 approximately the same percent of Alberta's population lived in urban areas as was the case in Ontario and Manitoba was only a few percentage points behind. Saskatchewan, which was only a little more than half as urbanized as Ontario in 1961, had moved to within approximately three-fourths of the Ontario level by 1981. In fact, during the latter part of the 1970s, while rural population growth exceeded urban in the rest of the provinces, the three Prairie provinces continued to become more urban.²

Where people live, of course, is closely related to where they work. Employment in agriculture in the Prairie region continued to decline between 1961 and 1981. As a percent of the Prairie labour force, agriculture accounted for only about one-half in 1981 what it had in 1961 although the rate of decline slowed in the latter years of the 1970s. Employment in service and trade industries, on the other hand, grew rapidly. Many of the specific sub-sectors of these industries,

²Census of Canada, 1961, 1971, 1976 and 1981.

such as computer services, business consultants, health care institutions, and post-secondary non-university establishments, were activities that really can only be conducted in a larger urban setting.³

In a general way the experience of the individual communities reflect the change in employment patterns identified above. By and large small communities which serve rural industries and rural dwellers declined as there was a decline in employment in rural areas and an outmigration of rural people. Cities providing an appropriate setting for the growing service and trade industries expanded as employment in these activities increased.

On Figures 2-7 through 2-12 the change in population and number of businesses is shown for each of the three Prairie provinces for the 1961-1981 period.⁴ On each figure there are eight different size-groups for incorporated communities. The incorporated centres include all of those in each province which were in existence in both 1961 and 1981 regardless of size.⁵ It is important to note that the communities are held in the size-group that they occupied in 1961 throughout the 20-year period. By doing so, the focus is on the experience of centres which

³Economic Council of Canada, Western Transition (Ottawa, 1984).

⁴Population data is from the Canadian census. The population of the 5 major Prairie cities shown in these comparisons refers to their metropolitan areas using the definitions in effect at the date of each census. Business data is from the Dun and Bradstreet, Reference Book, quarterly.

⁵Unincorporated communities are excluded from this comparison because data is less consistently available for these places and because they are not of uniform size between provinces. Unincorporated centres are selectively included in some of the following comparisons, however.

were of different size at the beginning of the period rather than on the system as such. The lines are shown as indexes of each group's 1961 total, thereby focussing on relative change rather than absolute magnitudes.

The pattern of population change experienced by incorporated communities in the three provinces is similar in several respects although the magnitude of the changes differed between them. All categories of incorporated Alberta communities experienced absolute population growth over the 20 year period. Manitoba communities were more stable, on average, avoiding both large gains or large losses. Saskatchewan's experience was more volatile with gains and losses exceeding Manitoba's but with its gains being smaller than Alberta's. Focussing on the smallest two incorporated size categories, these communities experienced relative declines in population in all three provinces between 1961 and 1971 and absolute declines in Manitoba and Saskatchewan. After 1971 these smaller centres began to regain population such that after 1976 only the smallest category of places in Saskatchewan continued to decline.

In terms of business services offered, the pattern is very similar in all three provinces. The smallest two categories of incorporated communities lost businesses between 1961 and 1971 but, except for the smallest category in Manitoba, began to gain after 1971. The smallest category in Manitoba began to gain after 1976. However, even after the downward trend was reversed, the smallest categories had not recovered to their 1961 levels in any province by 1981 and, of those communities in the second smallest category, only Alberta's contained more

businesses in 1981 than in 1961. This apparent recovery is not as it first seems, however. During the two decades following 1961 the smallest two categories of communities lost many of the businesses that served the agricultural sector and rural consumers. The number of implement dealers, bulk fuel dealers, and even grocery stores, general stores and gasoline stations declined very substantially. Locker plants and motion picture theatres virtually disappeared. The upturn in number of businesses during the 1970s for the smallest two categories of communities shown in Figures 2-8, 2-10 and 2-12 represent a major increase in the number of incorporated farms, contracting firms and for-hire transportation firms whose offices of record are in the small communities. Obviously the gain in these activities does not represent a revival of the trade centre roles of these communities. While a few of the incorporated farms clean grain or sell sprays and fertilizers to fellow farmers, most do not. The transport firms and contractors located in the small communities depend on business from several adjacent communities and an extended rural area. If the incorporated farms, transport and contracting firms are disregarded, the decline in number of businesses in the smallest two categories of incorporated centres in all three provinces continues through 1981.

In order to provide some perspective on the current absolute size of the communities in question summary descriptions are provided in Table 2-2.

There are, in addition, many unincorporated centres in each of the Prairie provinces. These range in size from 2 or 3 people to a few that have in excess of 1,000 inhabitants. However, statistics have not been

TABLE 2-2 NUMBER, AVERAGE POPULATION AND AVERAGE NUMBER
OF BUSINESSES IN SMALL COMMUNITIES,
PRAIRIE REGION, 1981

Manitoba			
	< 200	200-499	500-999
Population	132	411	741
Businesses	3.0	14.0	28.5
Number of Centres	1	14	29
Saskatchewan			
	< 200	200-499	500-999
Population	94	330	783
Businesses	3.0	9.8	24.2
Number of Centres	152	189	67
Alberta			
	< 200	200-499	500-999
Population	144	328	680
Businesses	7.0	14.1	41.3
Number of Centres	28	70	40

systematically collected for these communities through time. The size range for which information has been gathered has varied between censuses and numerous centres were excluded from the 1976 census that were included in the 1971 census, 1981 census, or both. Thus comparisons of the type provided for incorporated places are not possible.

TABLE 2-3 NUMBER, AVERAGE POPULATION AND AVERAGE NUMBER OF BUSINESSES IN UNINCORPORATED RURAL SERVICE CENTRES IN THE SOUTHERN PRAIRIE PROVINCES, 1981

	Manitoba	Saskatchewan	Alberta
Population	190	64	102
Businesses	7.4	1.7	4.7
Number of Centres	182	139	128

In addition, some unincorporated centres perform somewhat unique roles. They may be resort communities or summer cottage subdivisions for example. Nevertheless many are rural service centres which perform functions much like their incorporated counterparts.

In order to obtain some information about these unincorporated places that are primarily rural service centres, a list of unincorporated communities with populations of 50 or more in 1961, which were also listed in the 1981 census, was compiled. From this list special purpose centres such as resort communities were extracted.⁶ The remainder were used for comparison and analysis in subsequent chapters of this study. A summary of the characteristics of these communities is provided in Table 2-3.

As suggested in this table, corporate status is uncommon for

⁶Communities were selected out with the assistance of knowledgeable provincial government employees: Department of Agriculture in Manitoba; Rural Affairs in Saskatchewan; and Municipal Affairs in Alberta.

communities with less than 250 population in Manitoba. In Saskatchewan unincorporated communities are generally smaller than, but do overlap with, the smallest incorporated category. Unincorporated centres in Alberta are somewhat smaller than, but overlap somewhat more with, the smallest category of incorporated places.

While population and number of businesses are useful indicators of a community's viability, its functional role is better defined by the types of services offered. Thus in Tables 2-4 and 2-5 what might be called functional profiles are provided for the region's smaller incorporated centres. Similar information for unincorporated places is shown in Tables 2-6 and 2-7.

A perusal of Tables 2-4 through 2-7 suggests that the incorporated centres of under 200 population, as well as the average unincorporated centre in each province, probably serves only as a grain collection point and as a very local convenience centre. Once the incorporated farms, transport and contracting firms are subtracted out, none of these groups have more than four business outlets per centre on the average.

Further, the eclectic composition of the firms that constitute this four-or-fewer outlet average indicates that they are the residual of a process of decline that has left these communities with a curious and unsystematic mixture of firms that would not be expected in a growing or stable environment. Thus, while the populations of many of these communities may well have stabilized in Manitoba and Saskatchewan, and even increased in Alberta, their trade centre roles would appear to have deteriorated to the point where the majority of them will not again perform more than a local convenience centre function.

TABLE 2-4 AVERAGE NUMBER¹ OF BUSINESSES OF VARIOUS TYPES IN INCORPORATED COMMUNITIES,
PRAIRIE PROVINCES, 1981

	Manitoba			Saskatchewan			Alberta		
	<200	200-499	500-999	<200	200-499	500-999	<200	200-499	500-999
Drug Stores	—	—	—	—	—	0.52	—	0.20	0.91
Specialty Food	—	0.13	0.64	—	0.14	0.51	—	0.18	0.88
Car Wash	—	0.13	0.71	—	0.17	0.49	—	0.27	1.24
Home Decorating	—	0.38	0.89	—	0.20	0.66	—	0.14	0.76
Auto Sales	—	—	0.64	—	0.18	0.91	—	0.20	0.74
Clothing	—	0.13	1.00	—	0.10	0.99	—	0.32	1.68
Bulk Fuel	—	0.25	0.43	—	0.23	0.54	0.23	0.42	0.79
Specialty Retail	—	0.38	0.96	—	0.17	0.87	—	0.31	1.97
Auto Repair	—	0.25	1.07	—	0.30	0.87	0.19	0.38	0.91
For Hire Transport	1.00	0.13	1.18	—	0.31	0.93	0.69	1.75	3.74
Bank	—	0.88	0.89	—	0.42	0.88	0.15	0.48	1.00
Manufacturing	—	0.25	1.39	0.10	0.39	1.06	0.46	0.82	2.06
Restaurant	—	0.75	1.46	0.10	0.56	1.04	0.23	0.66	1.71
Hotel	—	0.75	0.89	0.20	0.55	0.87	0.35	0.75	1.32
Grocery	—	1.13	1.13	0.20	0.50	1.09	0.46	0.58	1.56
Implement Dealer	—	0.63	0.96	0.12	0.55	1.30	0.15	0.30	1.12
Building Materials	—	0.75	1.43	0.15	0.68	1.79	0.46	0.96	2.06
General Store	—	1.25	1.68	0.40	0.75	1.15	0.54	1.03	1.32
Agriculture—Primary	1.00	2.13	3.00	0.35	0.91	1.75	1.27	2.77	5.65
Gas Station	1.00	1.63	2.18	0.49	1.07	1.64	0.73	1.32	1.44
Contractor	—	2.50	5.61	0.48	1.68	4.85	0.96	3.41	8.79

¹Values less than 0.10 omitted.

TABLE 2-5 PERCENT¹ OF INCORPORATED COMMUNITIES BY SIZE GROUP OFFERING SELECTED FACILITIES, PRAIRIE PROVINCES, 1981

	Special Health Care	Hospital	Doctor	High School	Elevator
Manitoba					
< 200	—	—	—	—	100
200-499	25	38	63	38	75
500-999	54	68	100	86	93
Saskatchewan					
< 200	—	—	—	12	94
200-499	—	14	29	61	93
500-999	48	61	100	96	97
Alberta					
< 200	—	—	—	19	100
200-499	11	11	21	63	94
500-999	56	62	100	85	97

¹Values less than 10 percent omitted.

TABLE 2-6 AVERAGE NUMBER OF BUSINESSES OF VARIOUS TYPES
IN UNINCORPORATED COMMUNITIES,
PRAIRIE PROVINCES, 1981

	Manitoba	Saskatchewan	Alberta
Drug Stores	—	—	—
Specialty Food	—	—	—
Car Wash	0.18	—	0.10
Home Decorating	0.13	—	0.11
Auto Sales	—	—	—
Clothing	—	—	—
Bulk Fuel	0.13	—	—
Specialty Retail	0.16	—	—
Auto Repair	0.30	—	—
For Hire Transport	0.36	—	0.36
Bank	0.12	—	—
Manufacturing	0.45	—	0.13
Restaurant	0.37	—	0.13
Hotel	0.20	—	0.16
Grocery	0.31	0.10	0.13
Implement Dealer	0.16	—	0.10
Building Materials	0.40	—	0.16
General Store	0.75	0.37	0.49
Agriculture—Primary	1.29	0.21	0.97
Gas Station	0.74	0.31	0.38
Contractor	1.27	0.32	1.20

¹ Values less than 0.10 omitted.

TABLE 2-7 PERCENT¹ OF UNINCORPORATED COMMUNITIES
OFFERING SELECTED FACILITIES,
PRAIRIE PROVINCES, 1981

	Special Health Care	Hospital	Doctor	High School	Elevator
Manitoba	—	—	—	13	87
Saskatchewan	—	—	—	—	89
Alberta	—	—	—	—	92

¹Values less than 10 percent omitted.

Communities in the larger population-size categories undoubtedly contain a mixture of viable and non-viable trade centres. Further comment about their current status and possible future trade-centre roles is left to Chapter 4 where the trade centre function of these communities is specifically analyzed.

POPULATION CHANGE, 1961-71 CENSUS DIVISIONS, 1971 BOUNDARIES

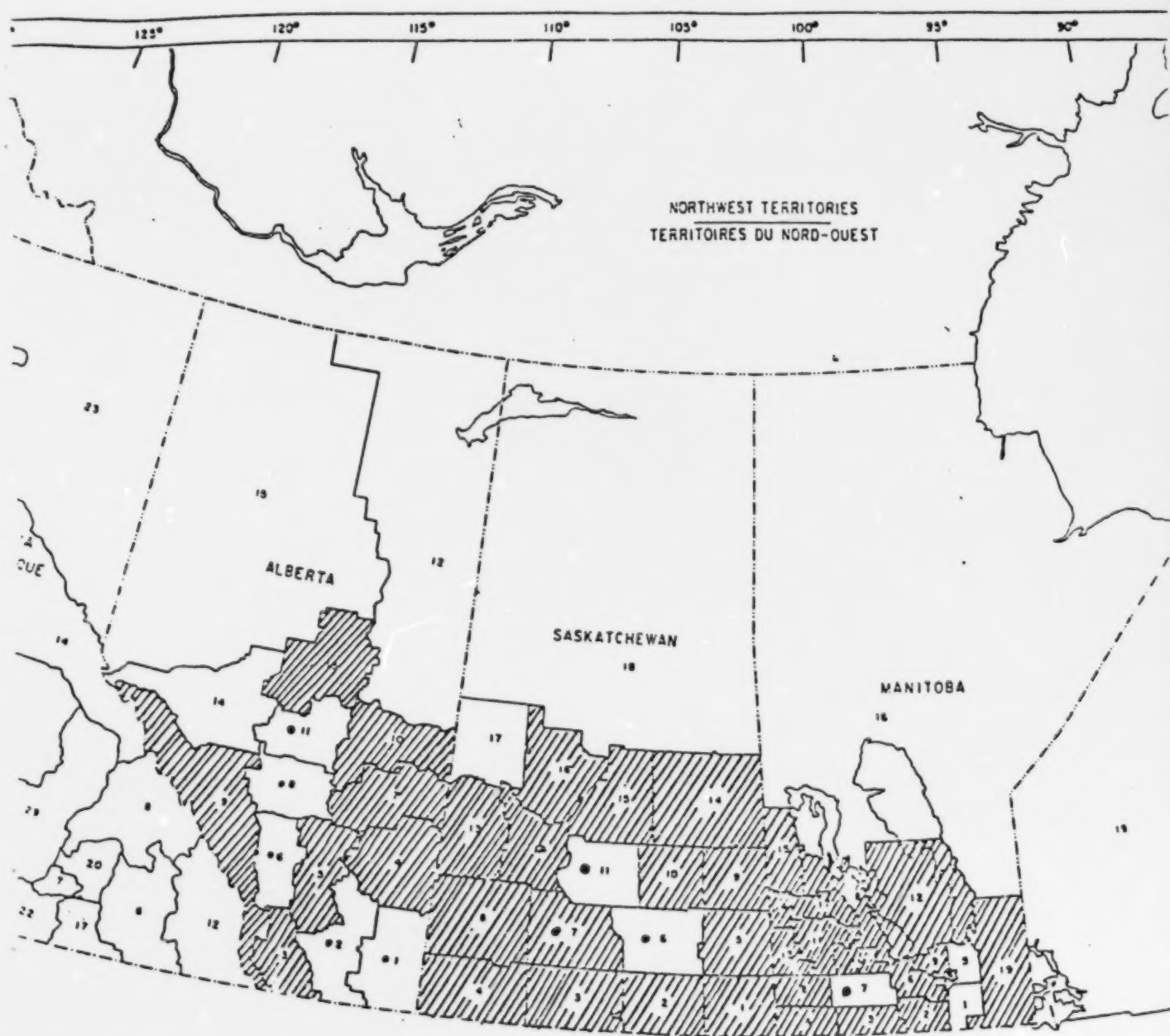


Figure 2-1

POPULATION CHANGE, 1961-71 UNINCORPORATED AREAS, 1971 BOUNDARIES

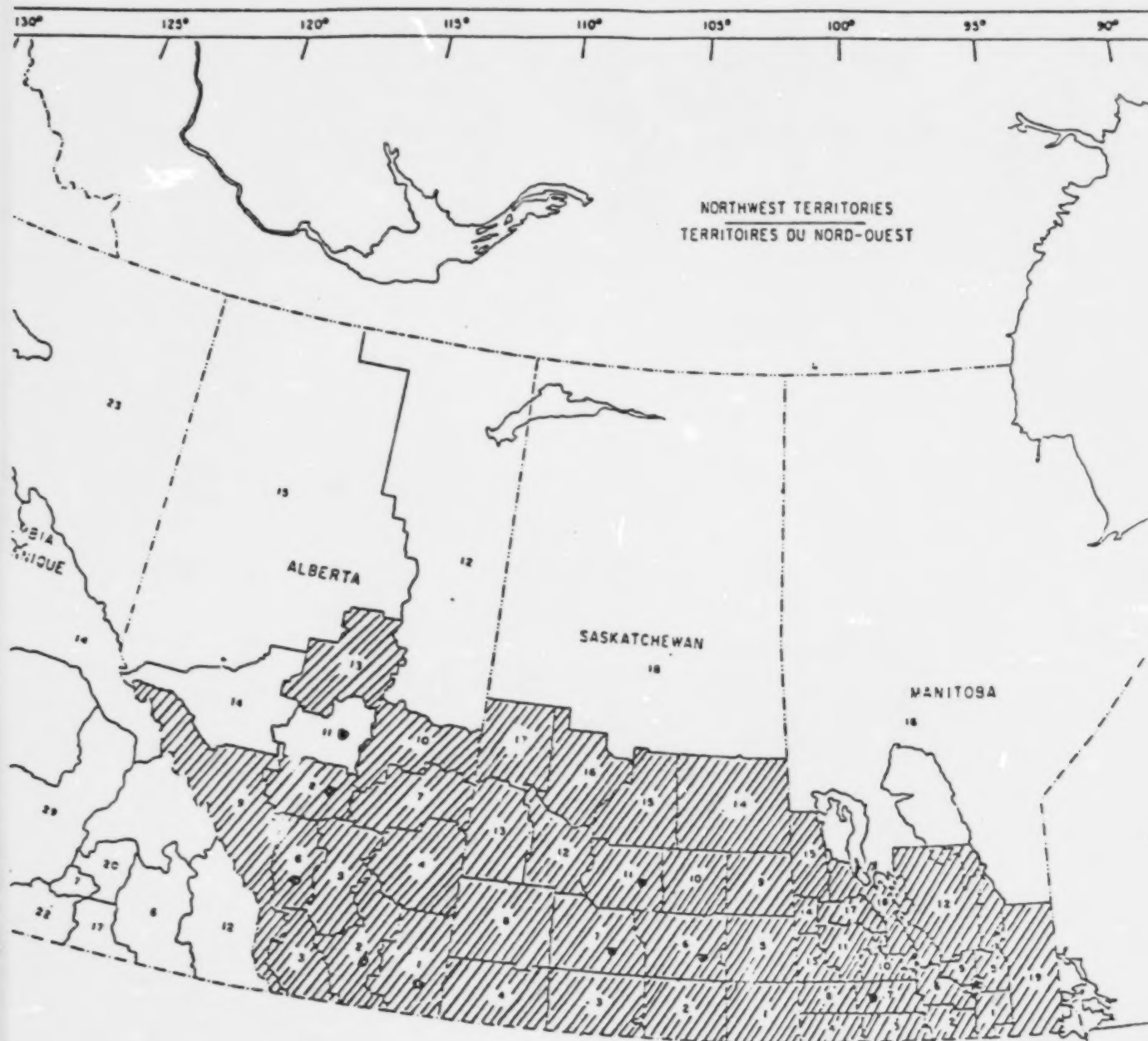


Figure 2-2

POPULATION CHANGE, 1971-76 CENSUS DIVISIONS, 1976 BOUNDARIES

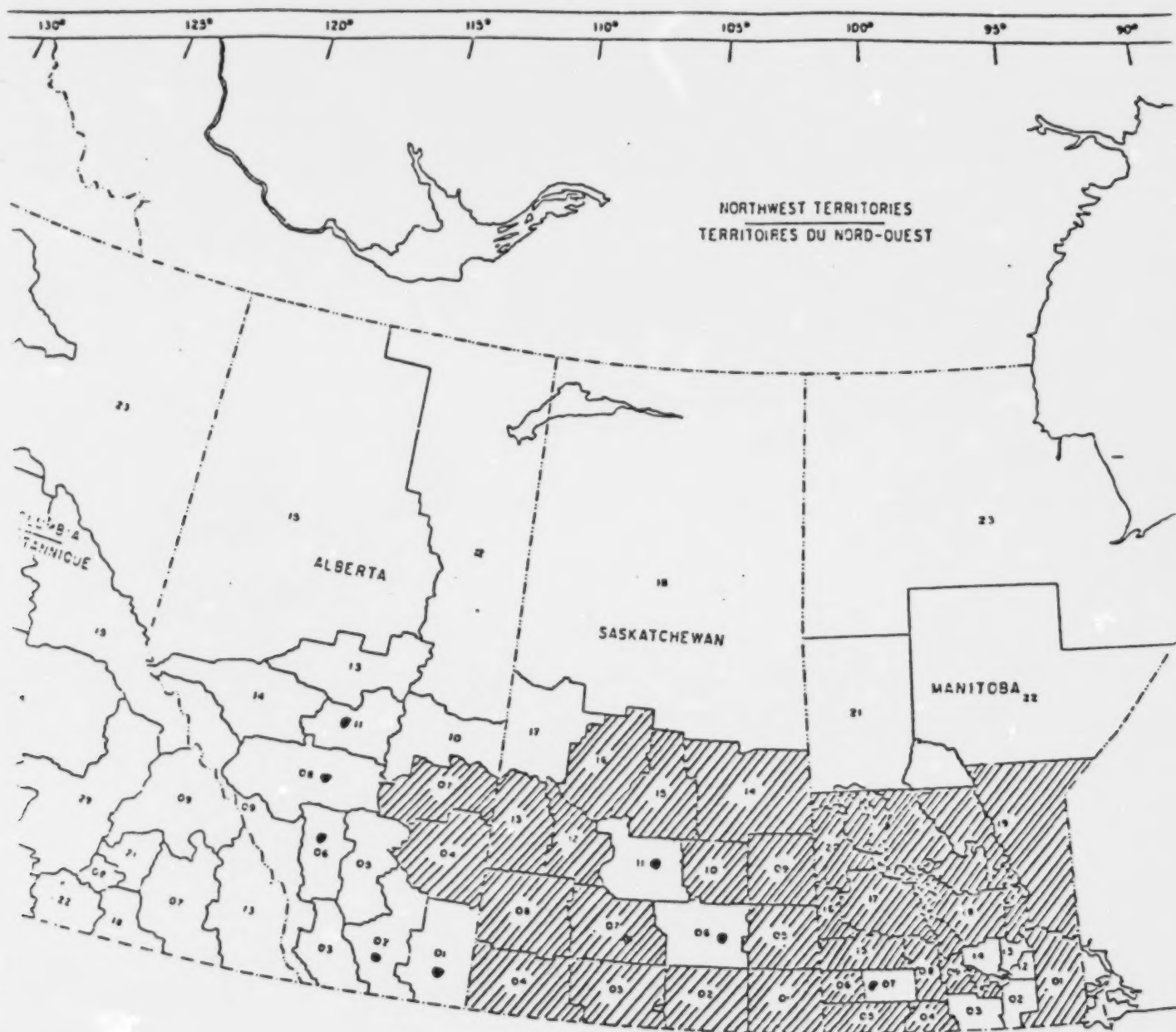


Figure 2-3

POPULATION CHANGE, 1971-76 UNINCORPORATED AREAS, 1976 BOUNDARIES

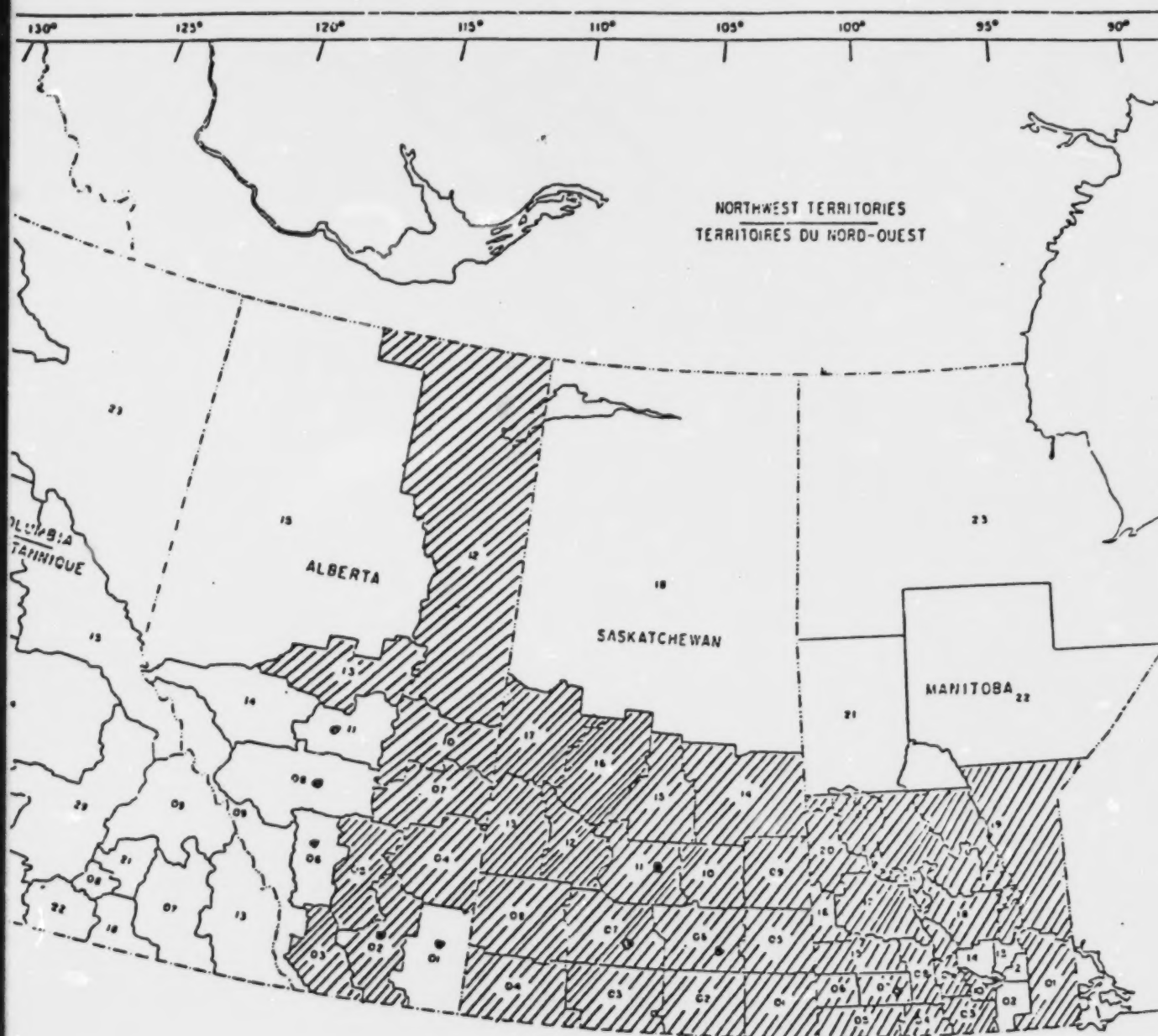


Figure 2-4

POPULATION CHANGE, 1976-81 CENSUS DIVISIONS, 1976 BOUNDARIES

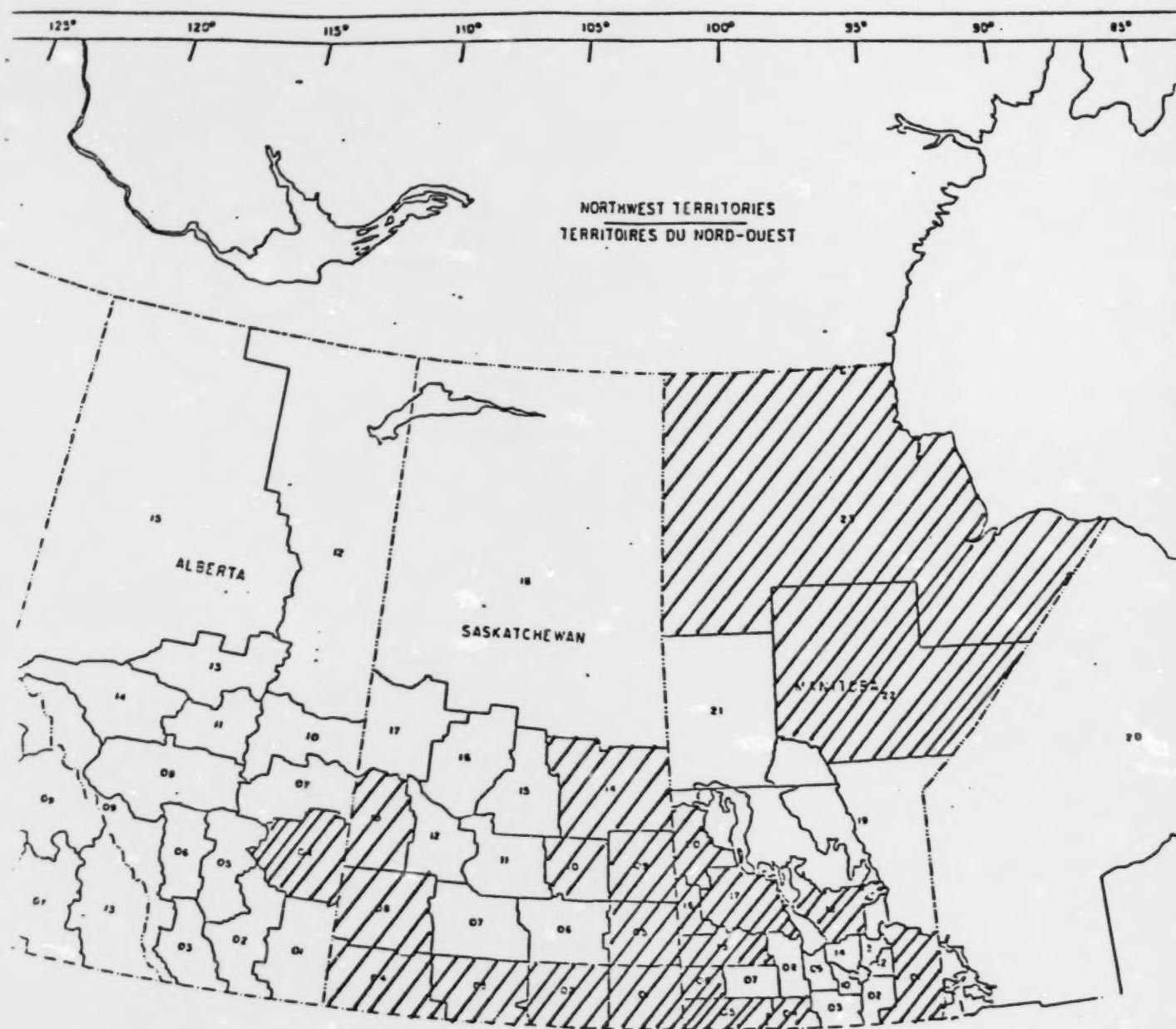


Figure 2-5

POPULATION CHANGE, 1976-81 UNINCORPORATED AREAS, 1976 BOUNDARIES

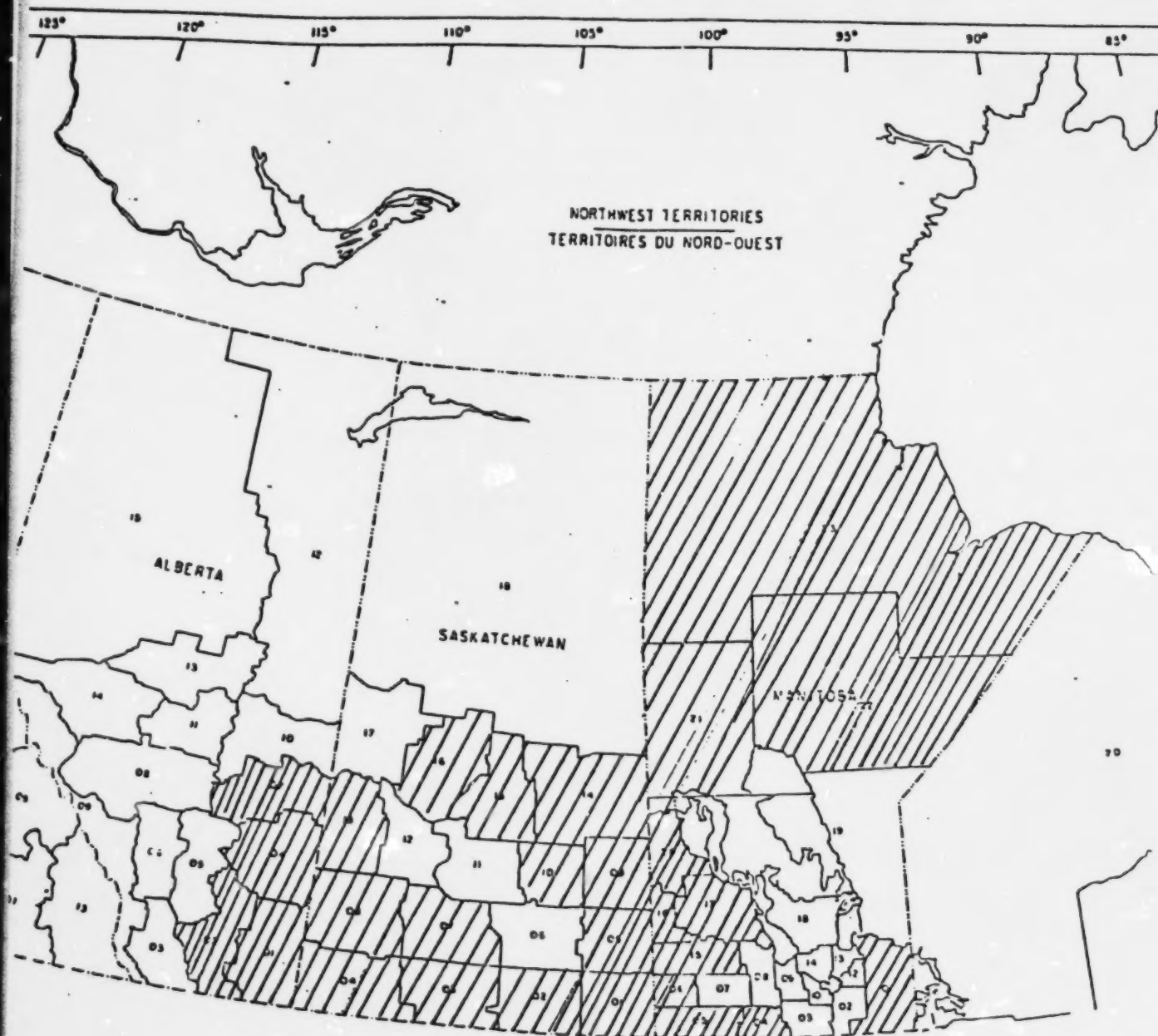


Figure 2-6

Figure 2.7. Index of Population of Manitoba Centres. 1961 Base

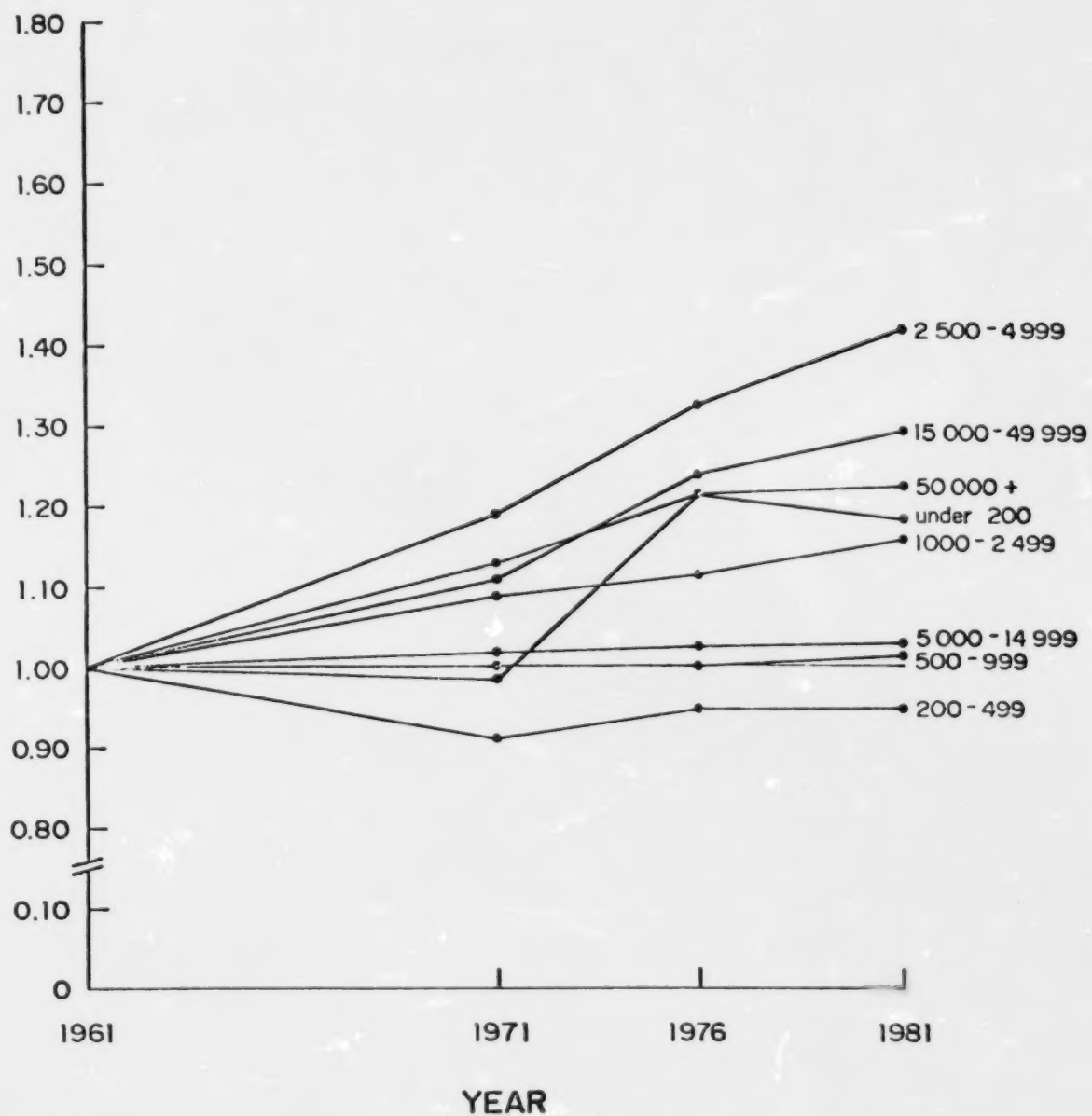


Figure 2.8. Index of Business Outlets in Manitoba Centres. 1961 base

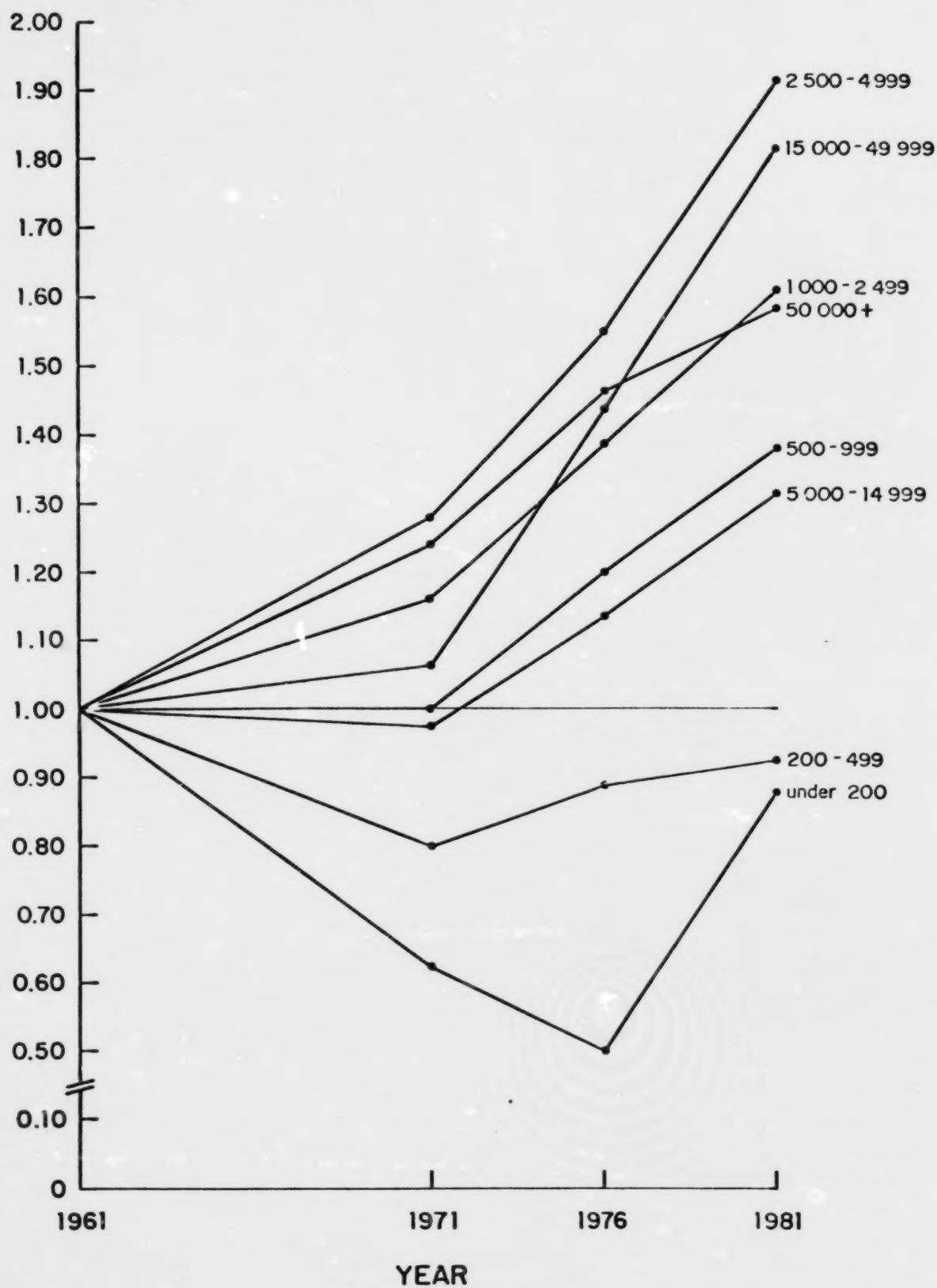


Figure 2.9. Index of Population of Saskatchewan Centres. 1961 Base

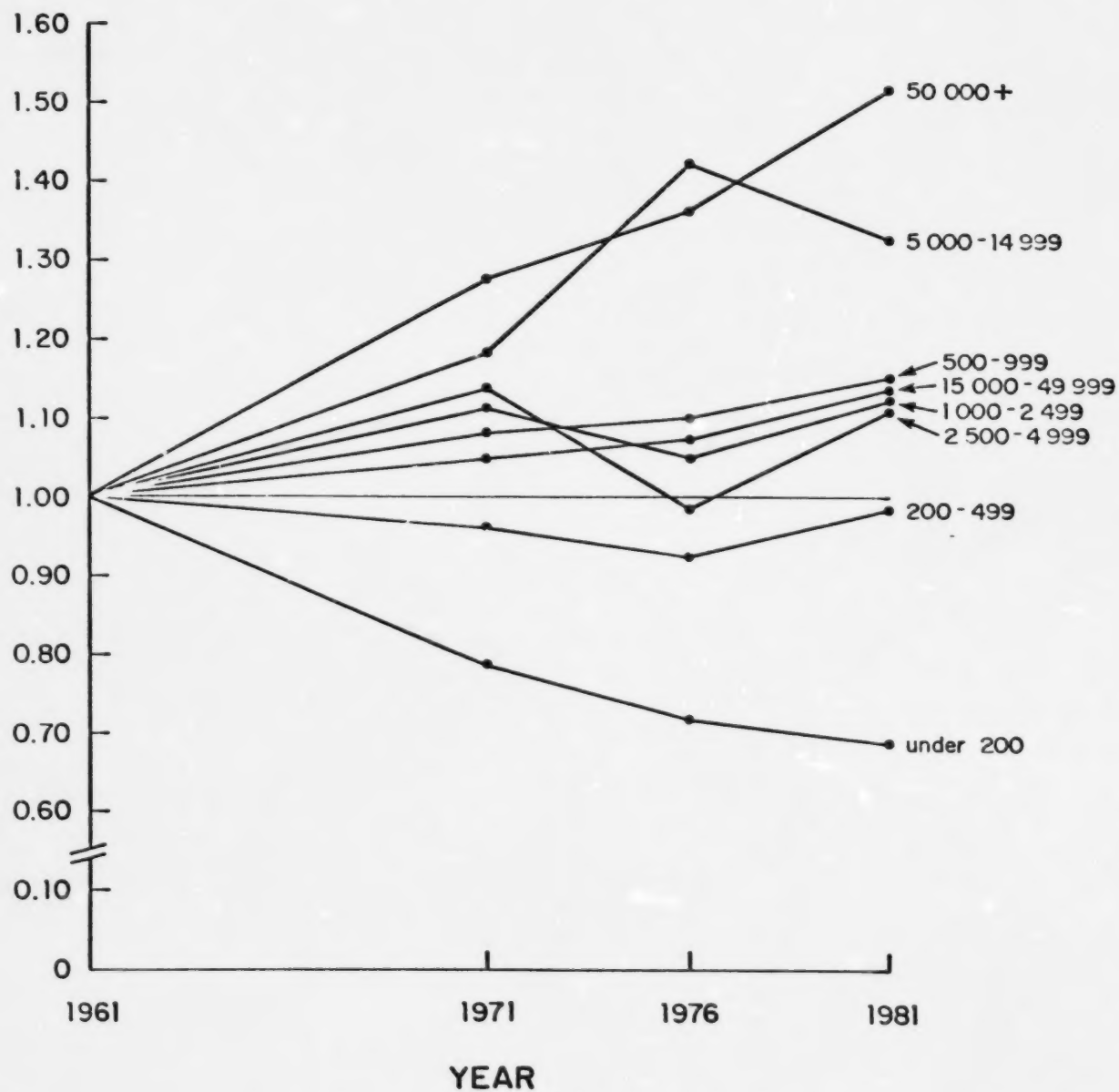


Figure 2.10. Index of Business Outlets in Saskatchewan Centres. 1961 Base

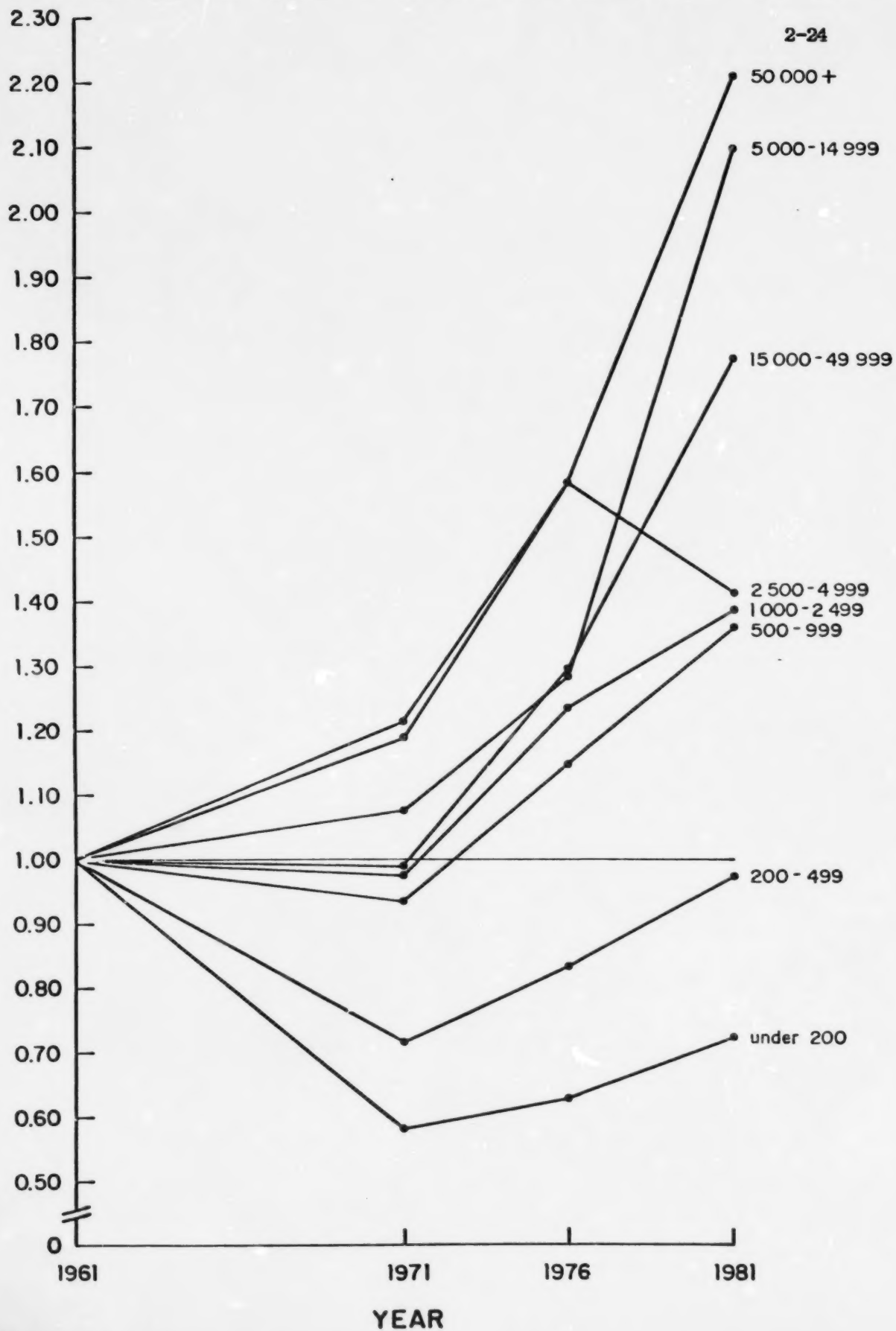


Figure 2.11. Index of Population of Alberta Centres. 1961 Base 2-25

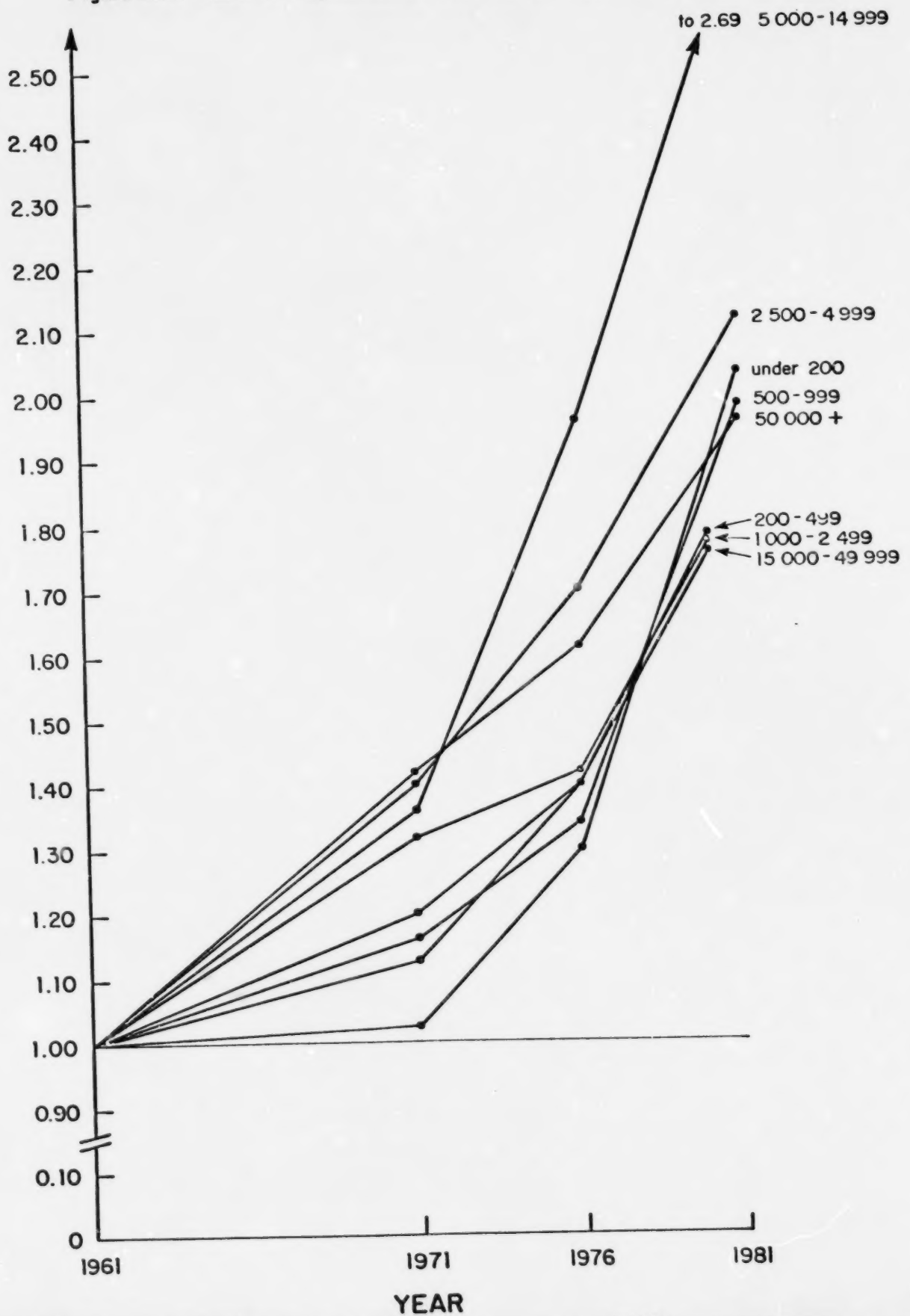
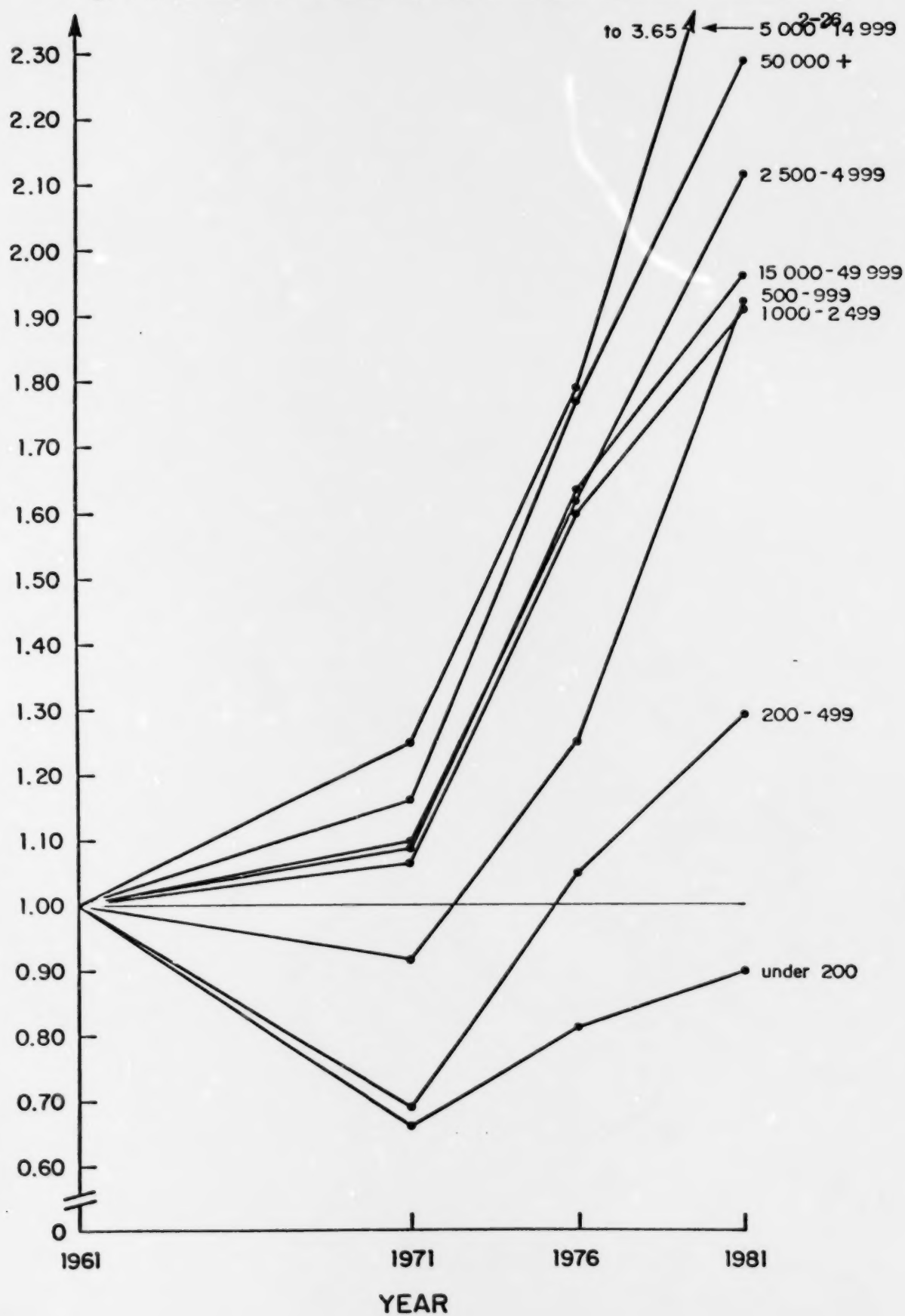


Figure 2.12. Index of Business Outlets in Alberta Centres. 1961 Base



CHAPTER 3

CASE STUDIES OF COMMUNITIES LOSING RAIL LINES AND/OR GRAIN ELEVATORS

INTRODUCTION

For at least two decades a vigorous debate has been conducted regarding the effect that removal of rail lines and/or grain elevators would have on the communities from which they were withdrawn. The intensity of the debate rose with each committee or commission that undertook to study the "rationalization"—itself an emotive term—of the rail network or the grain elevator system. The Grains Group, the Grain Handling and Transportation (Hall) Commission, the Prairie Rail Action Committee and the more recent committees studying changes to the Crow's Nest Pass freight rates have all heard the argument that branch line abandonment, or other changes which would lead to consolidation of the elevator system, would have very detrimental consequences for the communities losing these facilities.

During most of this period the debate was hampered by a lack of data. There were simply not very many communities which had lost these facilities prior to 1970. Thus some of the arguments were based on surveys of what people said they would do if these facilities were removed from the community that they lived in or, in the case of farmers, to which they made grain deliveries. A Manitoba study concluded that farmers' shopping patterns would shift away from those

communities losing rail and/or elevator services.¹ A survey conducted by the University of Regina's Sample Survey and Data Bank led the authors of that study to a similar conclusion.² Either directly or by inference, the authors of both studies predicted that centres losing rail lines and/or elevators faced a more rapid decline than counterpart communities which retained these facilities.

Neither study examined sufficiently the correspondence between grain deliveries and shopping patterns, however. Rarely do grain deliveries and shopping trips coincide. The factors that make a centre attractive for shopping purposes have little to do with the delivery of grain. Consequently, there is little reason for shopping patterns to alter if the delivery point is changed.

In a study conducted for the Grains Group, information on shopping patterns of rural dwellers was obtained through the use of questionnaires.³ Two thousand were mailed to a random selection of rural dwellers in southeast Saskatchewan and an additional 500 were sent to a different group of farmers in the three prairie provinces who had delivered grain to an elevator that had subsequently closed. The information obtained indicated that shopping patterns did not coincide

¹Quoted in S. N. Kulshreshtha, A Current Perspective on the Prairie Grain Handling and Transportation System, Publication No. 269 (Saskatoon: University of Saskatchewan Transportation Centre, 1975).

²Sample Survey and Data Bank, The Community Impact of Rail Line Abandonment, 1975-76 (Regina: University of Regina, 1976).

³Jack C. Stabler, Economic Effect of Rationalization of the Grain Handling and Transportation System on Prairie Communities (Saskatoon: Underwood McLellan and Associates, 1972).

TABLE 3-1 SHOPPING PATTERNS OF FARMERS FOLLOWING CLOSURE
OF DELIVERY POINT

Item	Percent Answering		
	No Reply ¹	Change	No Change
Farm Supplies			
Seed	11.0	34.2	54.8
Fuel	6.8	16.4	76.7
Implements	16.4	15.1	68.5
Building Materials	11.0	13.7	75.3
Shopping Goods			
Groceries	5.5	24.7	69.9
Gasoline	6.8	17.8	75.3
Clothing	13.7	17.8	68.5
Furniture	30.1	12.3	57.5
Pharmaceuticals	8.2	11.0	80.8
Auto Repairs	5.5	11.0	83.6
Minor Appliances	24.7	9.6	65.8
Major Appliances	28.8	8.2	63.0
Banking Services	8.2	6.8	84.9
Doctor's Services	8.2	2.7	89.0

¹No reply to this particular question.

with grain deliveries. Further the replies from those whose delivery point had changed indicated that, on average, about 15 percent of the respondents had changed their shopping patterns following the closure of their elevator. Table 3-1, which is summarized from the Grains Group Study, shows the percent of respondents indicating either change or no change in their shopping patterns for a range of goods and services after their former delivery point had closed.

What is undoubtedly a more important explanation for the decline

of small communities was inadvertently revealed by the questionnaires returned. The number of questionnaires returned indicating that the addressee had retired, died or moved without leaving a forwarding address exceeded the number returned by those still farming and living in the same location.

In any case the emphasis of the argument has sometimes been misplaced. Seventy-eight percent of the centres which the Grains Group identified as candidates for abandonment were less than 200 in population at that time. Of places actually losing rail and/or elevator facilities between 1961 and 1981, for which data could be found, 75 percent were under 200 population in 1961. As a group these communities had been in decline for at least 20 years prior to that date. Further, the discussion in the last chapter indicated that between 1961 and 1971, when very few communities lost rail lines or elevators, this group continued to deteriorate. The fact is that rail line abandonment and elevator closure has, in most cases, followed rather than caused community decline.

SUMMARY OF IMPACTS OF RAIL LINE ABANDONMENT

1961-1971

Between 1961 and 1971 there were a limited number of rail lines abandoned with, of course, a closure of elevators on those lines. There were, in addition, a few delivery points closed on lines that continued to operate. Many of these closures were of little used facilities such as remote branch lines or isolated country elevators which were not

TABLE 3-2 COMMUNITIES LOSING RAIL LINES AND/OR ELEVATORS
BETWEEN 1961 AND 1971

		Population				Business Outlets			
I/U ¹		1961	1971	1976	1981	1961	1971	1976	1981
Saskatchewan									
Warman	I	659	781	1,120	2,076	8	9	11	40
Wawota	I	453	491	619	622	24	19	30	35
Kennedy	I	274	264	241	275	13	14	12	12
Windthorst	I	202	188	215	254	16	17	17	17
Albertsville	U	100	80	83	120	4	1	1	2
Jasmin	U	72	46	?	14	2	1	1	1
Cleeves	U	25	3	—	—	1	—	—	—
Tarnopol	U	23	40	?	—	2	2	2	—
Bender	U	4	4	—	—	—	—	—	—
Manitoba									
St. Lazare	I	449	431	476	414	11	18	16	16
Elma (Janow)	U	134	240	100	89	6	7	14	10
Elva	U	58	41	29	20	1	1	1	—
Manson	U	42	25	?	23	3	1	3	—
Underhill	U	12	4	—	—	1	—	—	—
Alberta									
Peers	U	128	131	162	111	7	7	8	15
Spedden	U	123	95	66	49	9	7	7	6
Bluffton	U	115	77	112	152	6	4	6	16
Sheerness	U	93	73	?	15	2	1	1	1
Carbondale	U	52	81	95	101	—	—	—	—
Pollockville	U	25	21	29	19	2	1	2	—
Atlee	U	7	—	—	—	1	—	—	—

¹ I = Incorporated U = Unincorporated

located in a trade centre. In total there were only 21 places from which rail lines or elevators were removed for which population or business data could be found. Population and business data for these

communities is provided in Table 3-2. Five of these communities are incorporated. They are St. Lazare in Manitoba and Warman, Wawota, Kennedy and Windthorst in Saskatchewan. In Figures 3-1 and 3-2 the population and business outlets of St. Lazare are compared with all incorporated communities in Manitoba which were between 200 and 499 in population in 1961. In Figures 3-3 and 3-4, population and business outlets in the Saskatchewan communities losing rail lines and/or elevators between 1961 and 1971 are compared with all similar sized Saskatchewan communities. Thus Warman is compared with the group which was between 500 and 999 in 1961 while Wawota, Kennedy and Windthorst are compared with the 200-499 sized group. As can be seen from the diagrams all of the incorporated communities losing rail lines and/or elevators compare favorably with the groups of all communities in their respective size categories. While Warman is adjacent to Saskatoon and has benefitted from growth of the larger city by becoming a bedroom community, this is not the case for the other four. They are situated in rural, agricultural areas.

Several of the unincorporated centres, 2 in Saskatchewan, 2 in Manitoba and 5 in Alberta had populations in excess of 50 people in 1961 and can therefore be compared with the groups of all unincorporated places in their respective provinces.⁴ This is done in summary form in Table 3-3, where the 1981 indexes of population and business of all

⁴As indicated in Table 3-2 there were 7 additional unincorporated places, under 50 in population in 1961, that also lost rail and/or elevator facilities between 1961 and 1971. Data are not systematically available for communities of this size, however. Thus comprehensive comparisons are not possible.

TABLE 3-3 1981 INDEXES OF POPULATION AND BUSINESSES—ALL
UNINCORPORATED COMMUNITIES AND UNINCORPORATED
CENTRES LOSING RAIL LINES AND/OR ELEVATORS
BETWEEN 1961 AND 1971 — 1961 BASE

	Population	Businesses
Manitoba		
All Unincorporated	96	92
Abandoned 1961-1971	57	143
Saskatchewan		
All Unincorporated	64	43
Abandoned 1961-1971	78	50
Alberta		
All Unincorporated	86	86
Abandoned 1961-1971	84	158

unincorporated rural service centres in each province are compared with the indexes of the unincorporated centres losing rail lines and/or elevators between 1961 and 1971. As is evident from the table, in 4 of the possible 6 comparisons the index for the communities losing rails and/or elevators exceeds that of the centres they are being compared with.

In summary, of the 12 possible comparisons of indexes for centres losing rails and/or elevators between 1961 and 1971, centres losing had higher values in 1981 in 9 of the 12 cases. While these comparisons suggest that the loss of rail lines and/or elevators has not had a systematic effect on communities losing them, the problem has always been that, for the decade of the 1960s, the number of closures and

TABLE 3-4 COMMUNITIES LOSING RAIL LINES AND ELEVATORS
1971-1981

	Manitoba	Saskatchewan	Alberta
Unincorporated	24	13	9
Incorporated			
< 200	—	13	—
200 - 499	2	12	4
500 - 999	2	2	1
Totals	28	40	14

abandonments was so small that this judgement could not be made with a high degree of confidence.

1971-1981

Between 1971 and 1981 there were abandonments involving 82 communities for which data was available.⁵ Their size and location by province is described in Table 3-4. These numbers are large enough to provide better comparisons than were possible with only the 1961-1971 cases.

In order to select sub-groups with which centres losing rail lines and elevators could be meaningfully compared, the size groups in which

⁵There were several additional place names on branch lines abandoned during this period and elevators were closed at several additional points. No population or business data could be found for these places, however.

the abandoned communities were found were disaggregated to reflect general location influences. Thus communities near major cities were separately identified in order to illustrate the influence of a favorable location on growth patterns. In addition, 175 communities identified by the Grains Group in 1972 as being on branch lines recommended for abandonment, but which in fact have retained rail lines and elevators, were also identified. The location of these communities must, on average, be judged as unfavorable. All are on branch lines. Many are on grid roads rather than major highways. Some are even off grids. They are generally poorly situated with respect to access to local consumer markets and often in the shadow of a larger, better situated, regional shopping centre. Except for retention of their branch lines and maintenance of their status as delivery points these communities are much like those which have lost rail and/or elevator facilities during the 1970s.

In Figures 3-5 through 3-26 graphs are provided which compare communities that have lost rail lines and/or elevators between 1971 and 1981 with those of similar size identified by the Grains Group as candidates for abandonment. For reference all communities in the given size class⁶ and those near major cities are also shown. As is evident on the diagrams, the difference between communities losing rail lines and elevators and the Grains Group's candidates is usually minimal. For

⁶The group of "all unincorporated centres," with which unincorporated centres losing rail lines and/or elevators are compared, is restricted to exclude all communities larger than the largest centre losing these facilities.

incorporated communities, the 1981 indexes exceeded those for the Grains Group's candidates in 9 of the 12 cases where comparison is possible. For unincorporated places the indexes of the candidates exceeded those of the abandoned centres in 4 of 6 cases.

As a check on these comparisons the null hypothesis (that the values of the means of the two universes from which the candidates and the abandoned communities were drawn are the same) was tested at the 5 percent level. The null hypothesis could not be rejected for any of the comparisons of incorporated centres. For the unincorporated centres the null hypothesis could not be rejected for any of the comparisons involving the Saskatchewan centres. For the comparisons involving the unincorporated centres in Manitoba the null hypothesis could not be rejected for either the population or the business data for 1961 but it was rejected for both sets of data for 1981. For Alberta the null hypothesis was rejected for the population data for both 1961 and 1981 but, for the business data, it could not be rejected for either date. In Tables 3-5A and 3-5B the results of these comparisons are summarized.

The different results of the comparisons of the unincorporated centres is likely explained by the fact that the means of the population and business outlets of abandoned communities in Manitoba were 20 and 25 percent, respectively, below those of the candidates in 1961. In Alberta the situation was reversed. The mean of the population of the abandoned centres was 43 percent greater than that of the candidates. Thus all else being equal, it would be expected that the abandoned centres in Manitoba would decline more rapidly than the candidates and that the candidates would decline more rapidly than the abandoned

TABLE 3-5A RESULTS OF THE TESTS¹ OF THE NULL
HYPOTHESIS ON POPULATION MEANS

	Manitoba		Saskatchewan		Alberta	
	1961	1981	1961	1981	1961	1981
Unincorporated	CR	R	CR	CR	R	R
< 200	*	*	CR	CR	*	*
200 - 499	†	†	CR	CR	CR	CR
500 - 999	CR	CR	CR	CR	CR	CR

TABLE 3-5B RESULTS OF THE TESTS OF THE NULL HYPOTHESIS
ON MEANS OF BUSINESS OUTLETS

	Manitoba		Saskatchewan		Alberta	
	1961	1981	1961	1981	1961	1981
Unincorporated	CR	R	CR	CR	CR	CR
< 200	*	*	CR	CR	*	*
200 - 499	†	†	CR	CR	CR	CR
500 - 999	CR	CR	CR	CR	CR	CR

CR — Could not reject the null hypothesis

R — Reject

* — No centres in this size class abandoned

† — No candidate

¹ t tests using separate variance estimate formula.

centres in Alberta which is exactly what happened.

Thus, combining the data for communities losing rail lines and/or elevators during the 1960s with that of the 1970s, it is not possible to conclude that removal of branch lines and/or elevators has had a systematic observable impact on communities from which they were withdrawn.

Figure 3.1. Index of Population of Manitoba Centres Losing Rail Lines and/or Elevators 1961 - 1971. 1961 Base

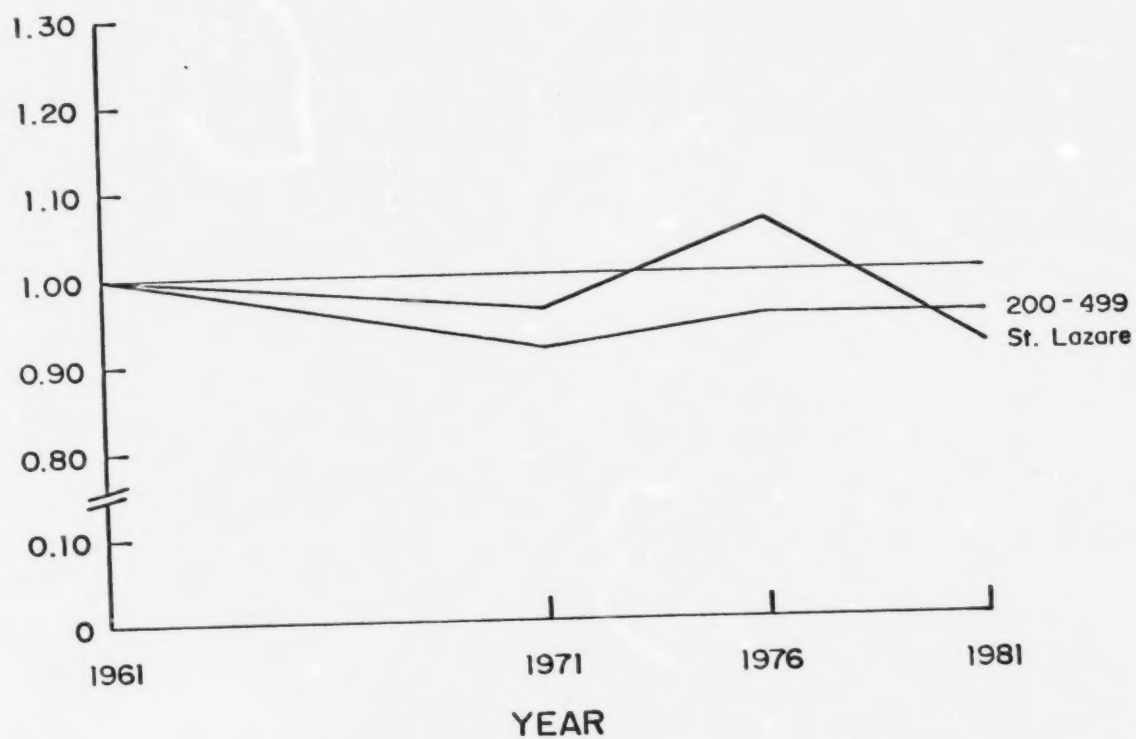


Figure 3.2. Index of Business Outlets of Manitoba Centres Losing Rail Lines and/or Elevators 1961-1971. 1961 Base

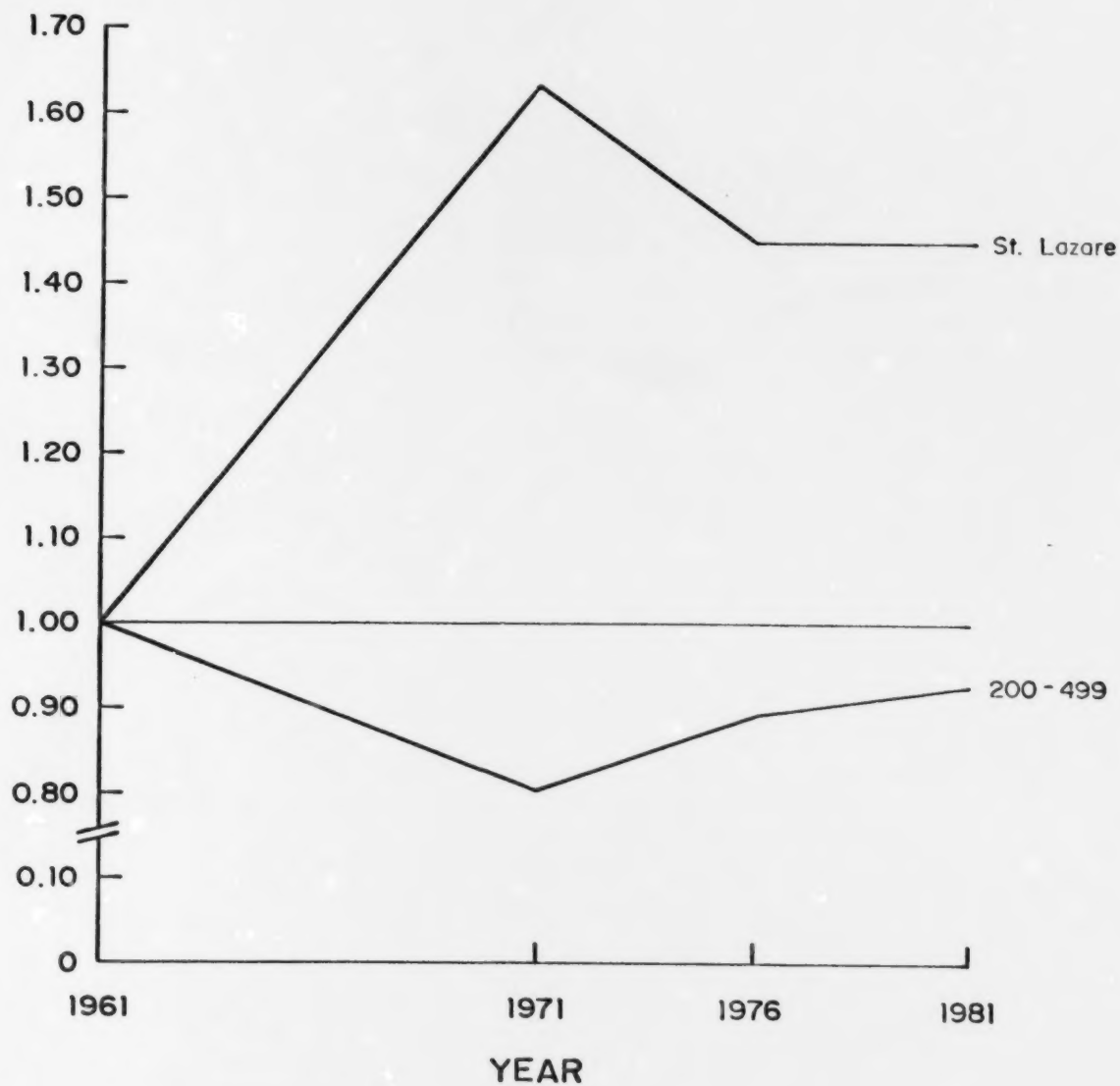


Figure 3.3. Index of Population of Saskatchewan Communities Losing Rail Lines and/or Elevators 1961 - 1971. 1961 Base

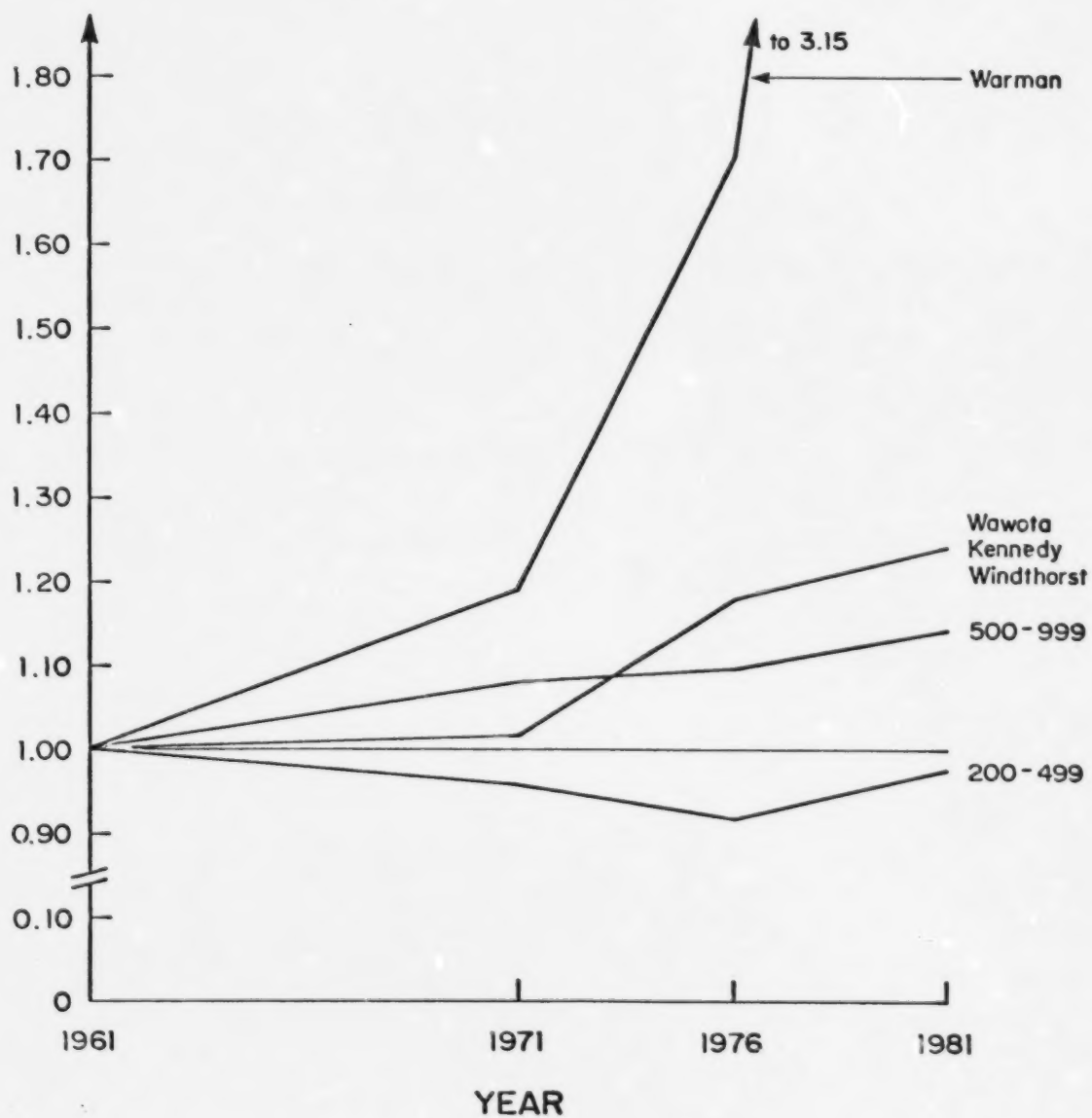


Figure 3.4. Index of Business Outlets of Saskatchewan Communities
Losing Rail Lines and/or Elevators 1961-1971. 1961 Base

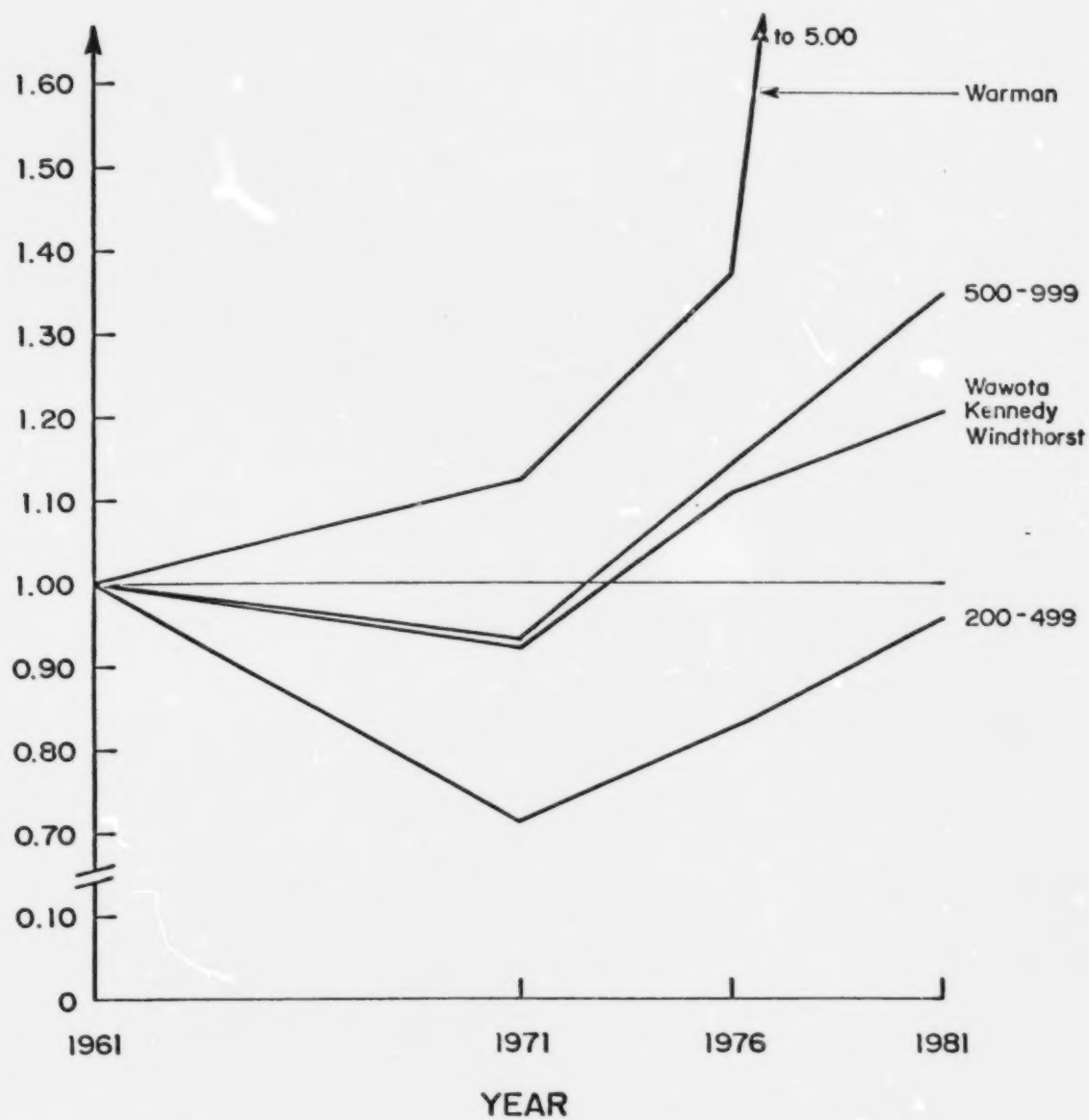


Figure 3.5. Index of Population of Manitoba Unincorporated Centres
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

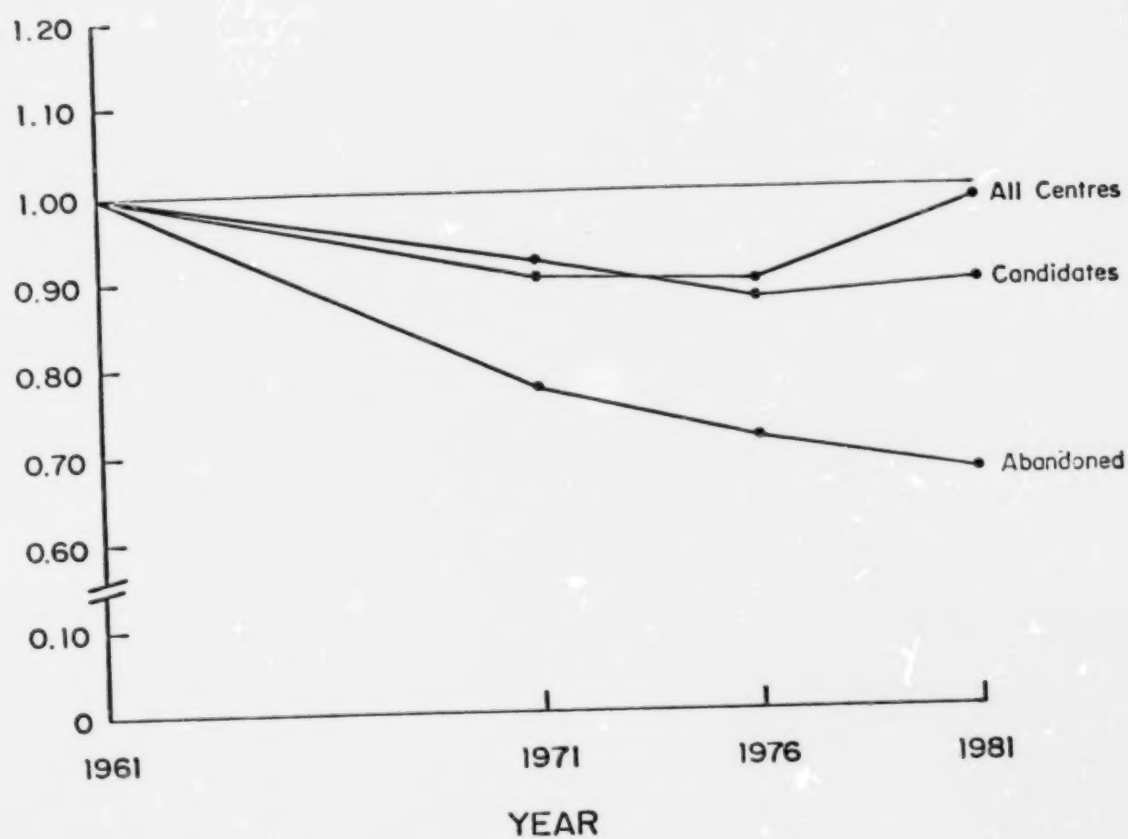


Figure 3.6. Index of Population of Manitoba Centres 200-499
Losing Rail Lines and/or Elevators 1971 - 1981. 1961 Base

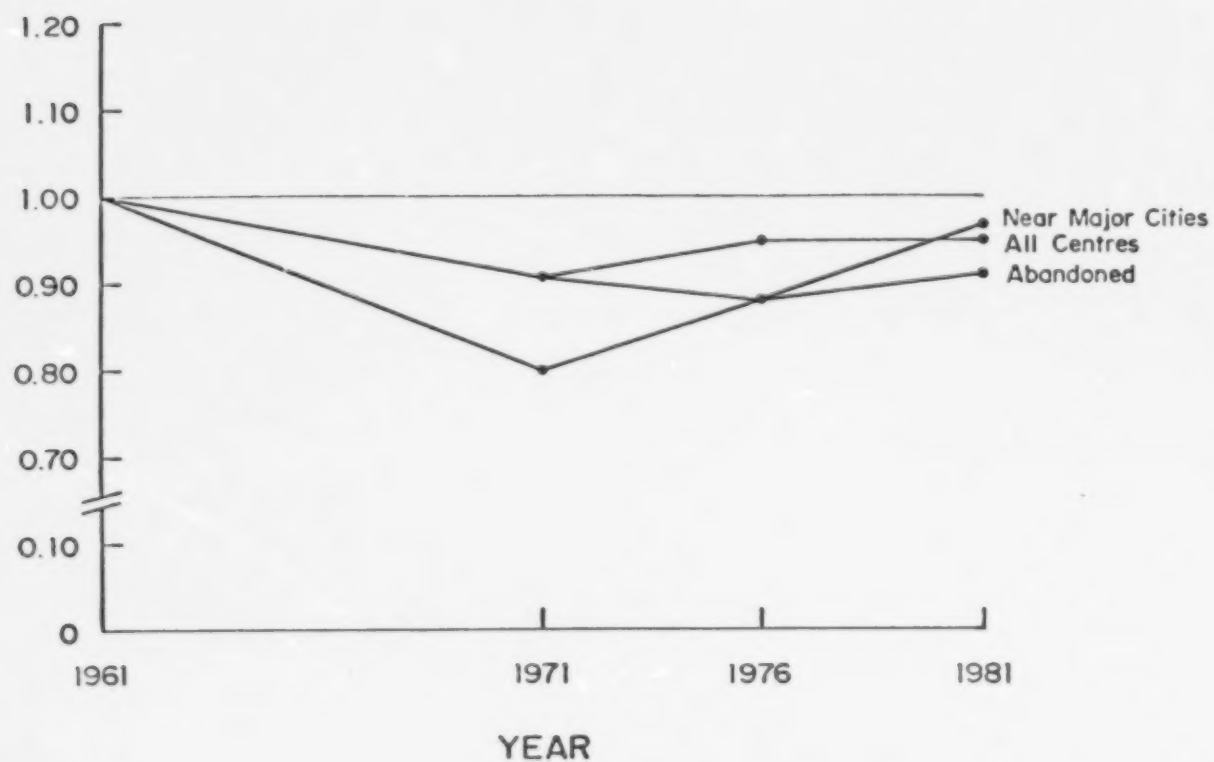


Figure 3.7. Index of Population of Manitoba Centres 500-999
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

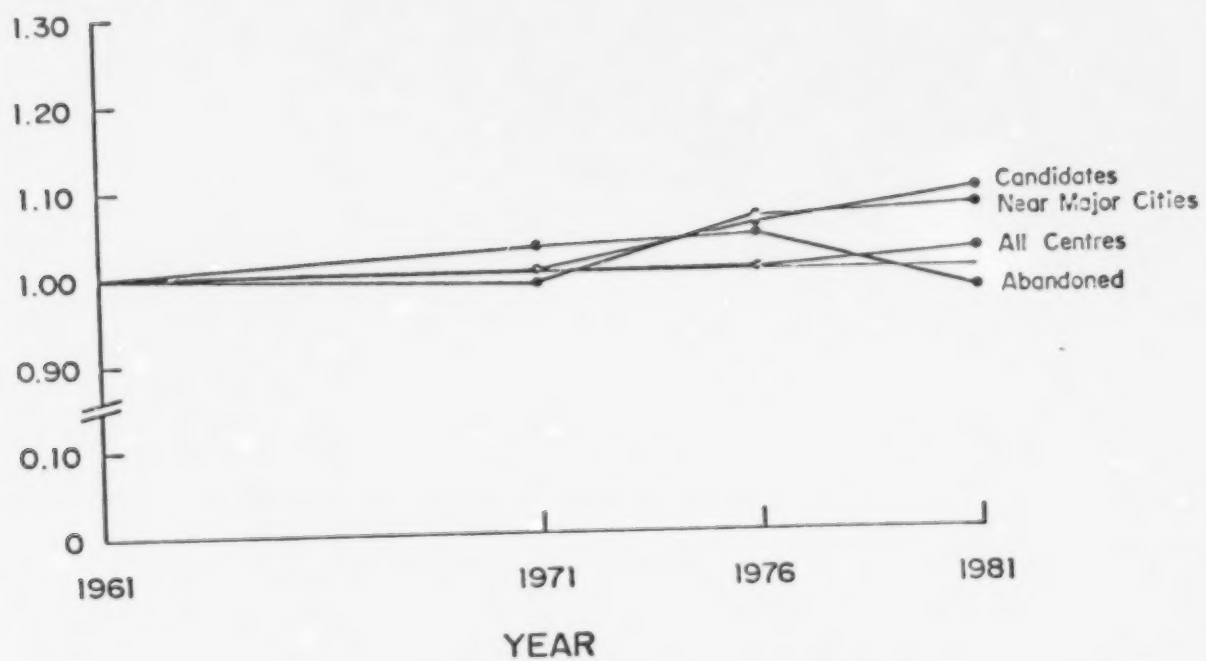


Figure 3.8 Index of Business Outlets of Manitoba Unincorporated Centres Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

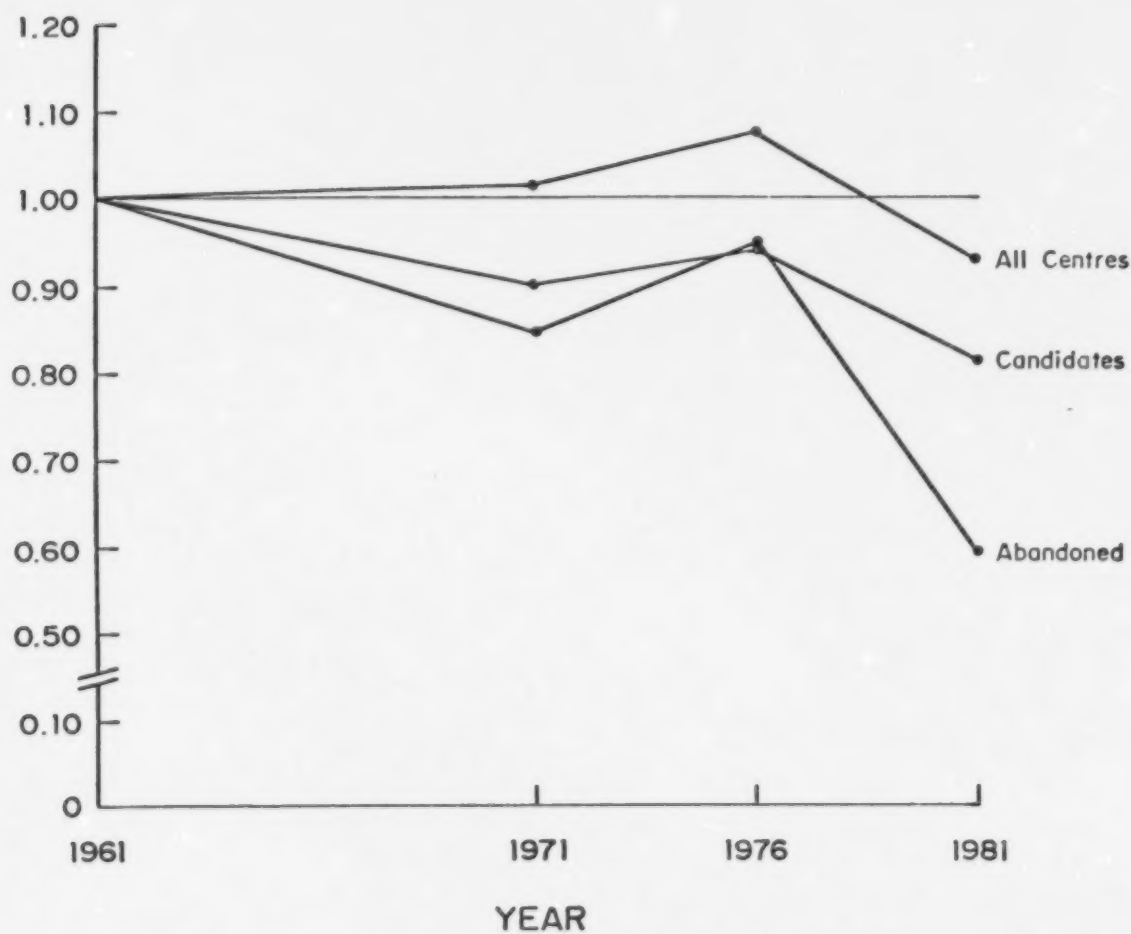


Figure 3.9. Index of Business Outlets of Manitoba Centres 200-499
Losing Rail Lines and/or Elevators 1971-1981, 1961 Base

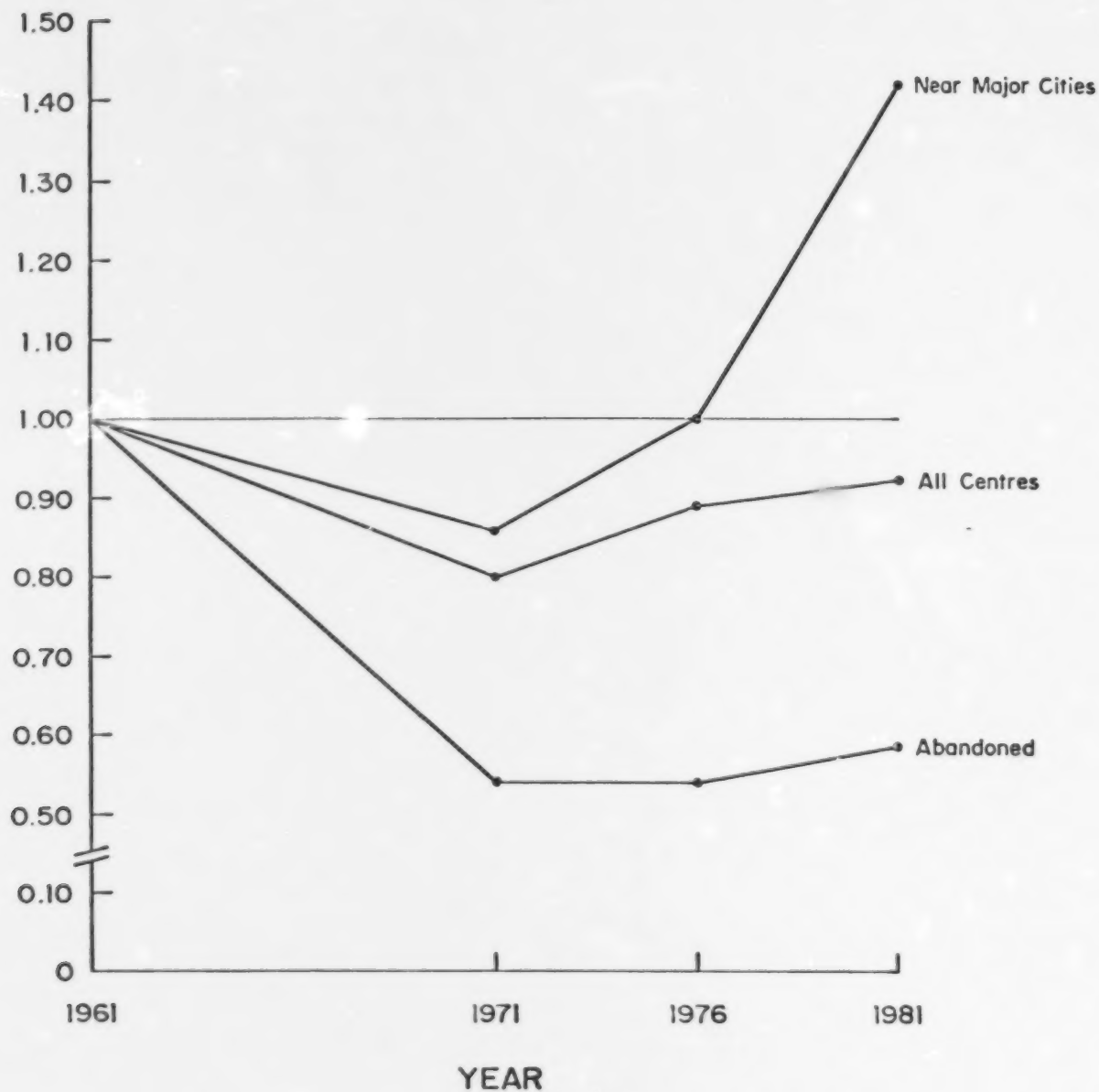


Figure 3.10. Index of Business Outlets of Manitoba Centres 500-999
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

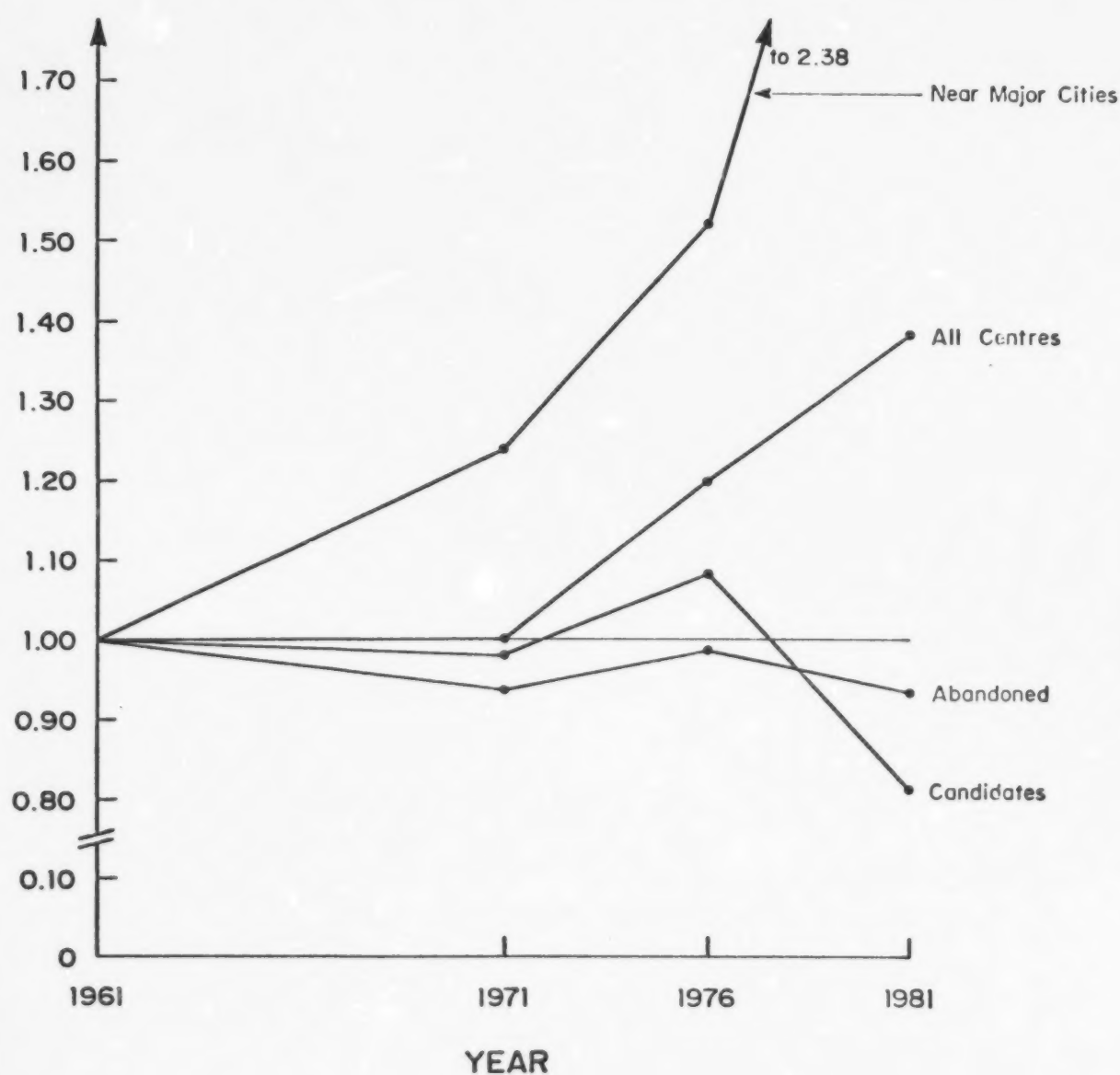


Figure 3.11 Index of Population of Saskatchewan Unincorporated Centres Losing Rail Lines and/or Elevators 1971-1981.
1961 Base

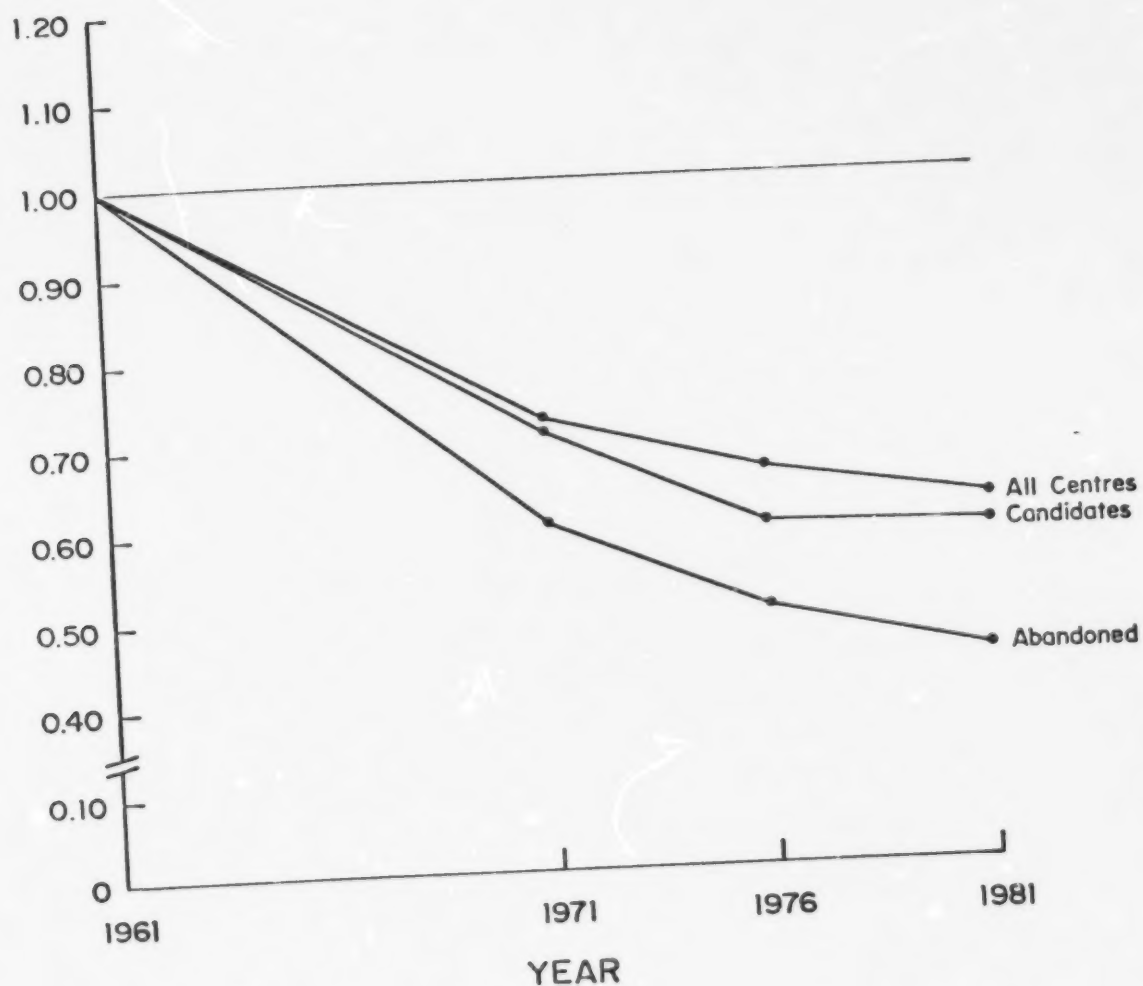


Figure 3.12. Index of Population of Saskatchewan Centres < 200
Losing Rail Lines and/or Elevators 1971 - 1981.
1961 Base

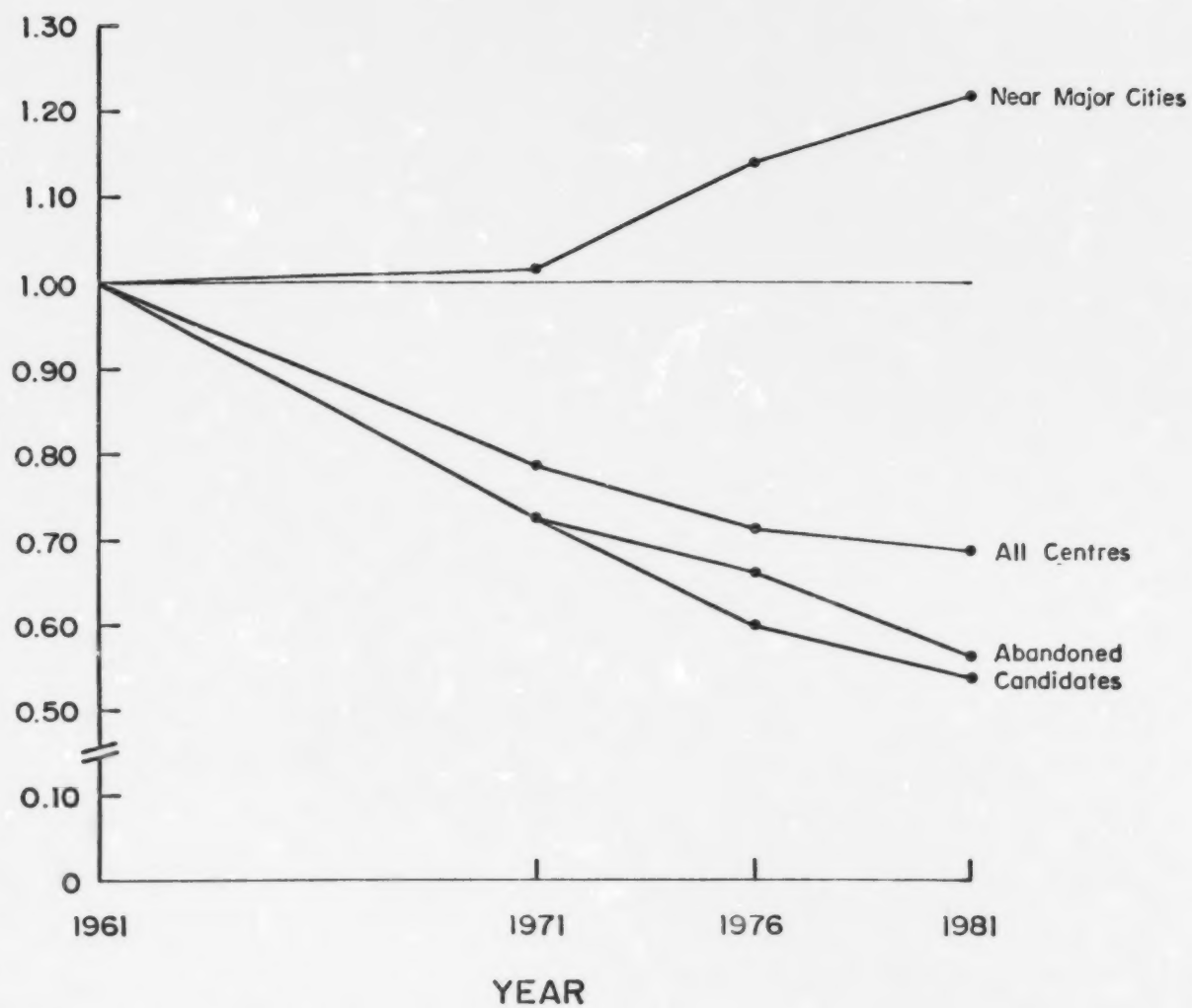


Figure 3.13. Index of Population of Saskatchewan Centres 200-499
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

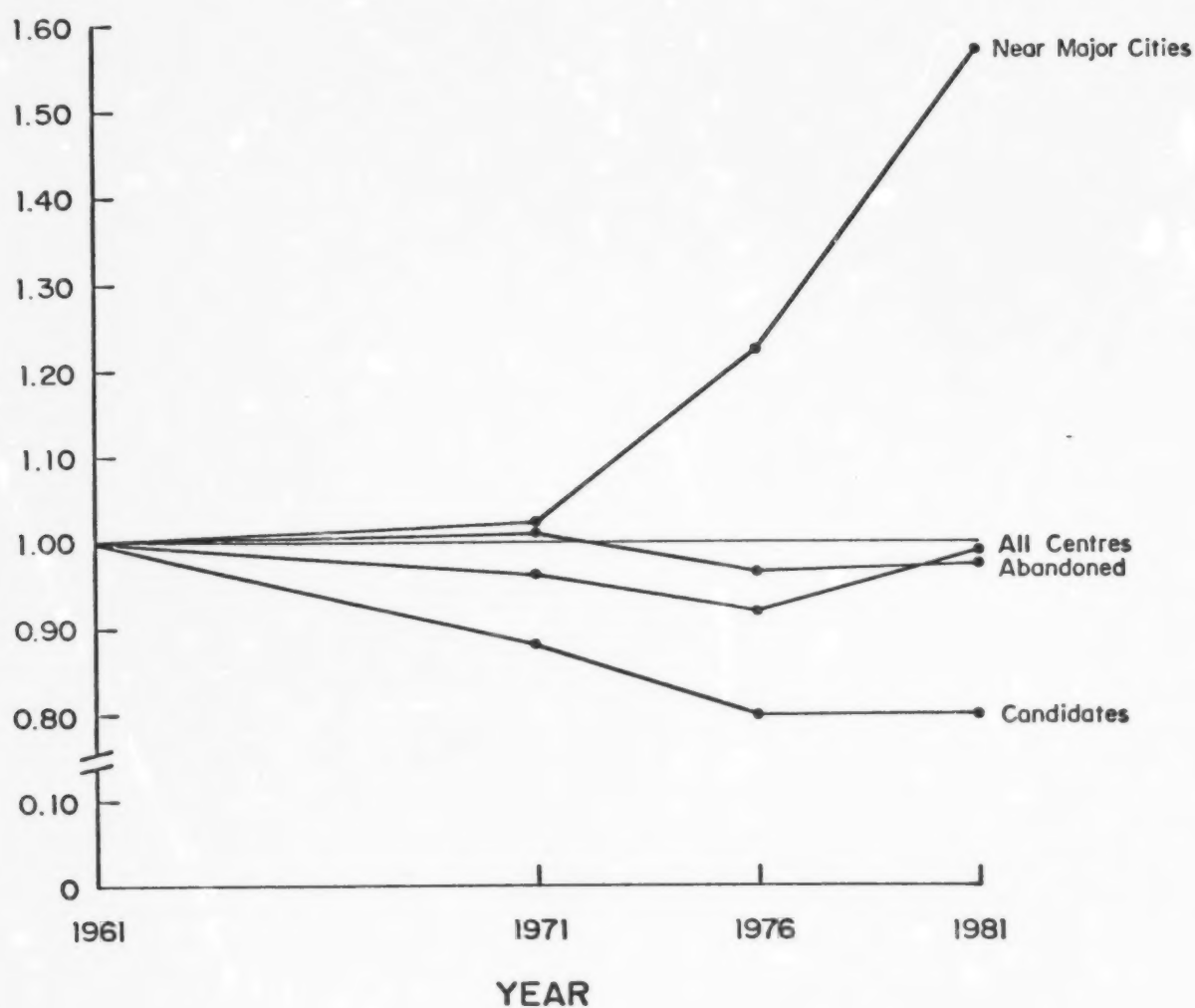


Figure 3.14. Index of Population of Saskatchewan Centres 500 - 999
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

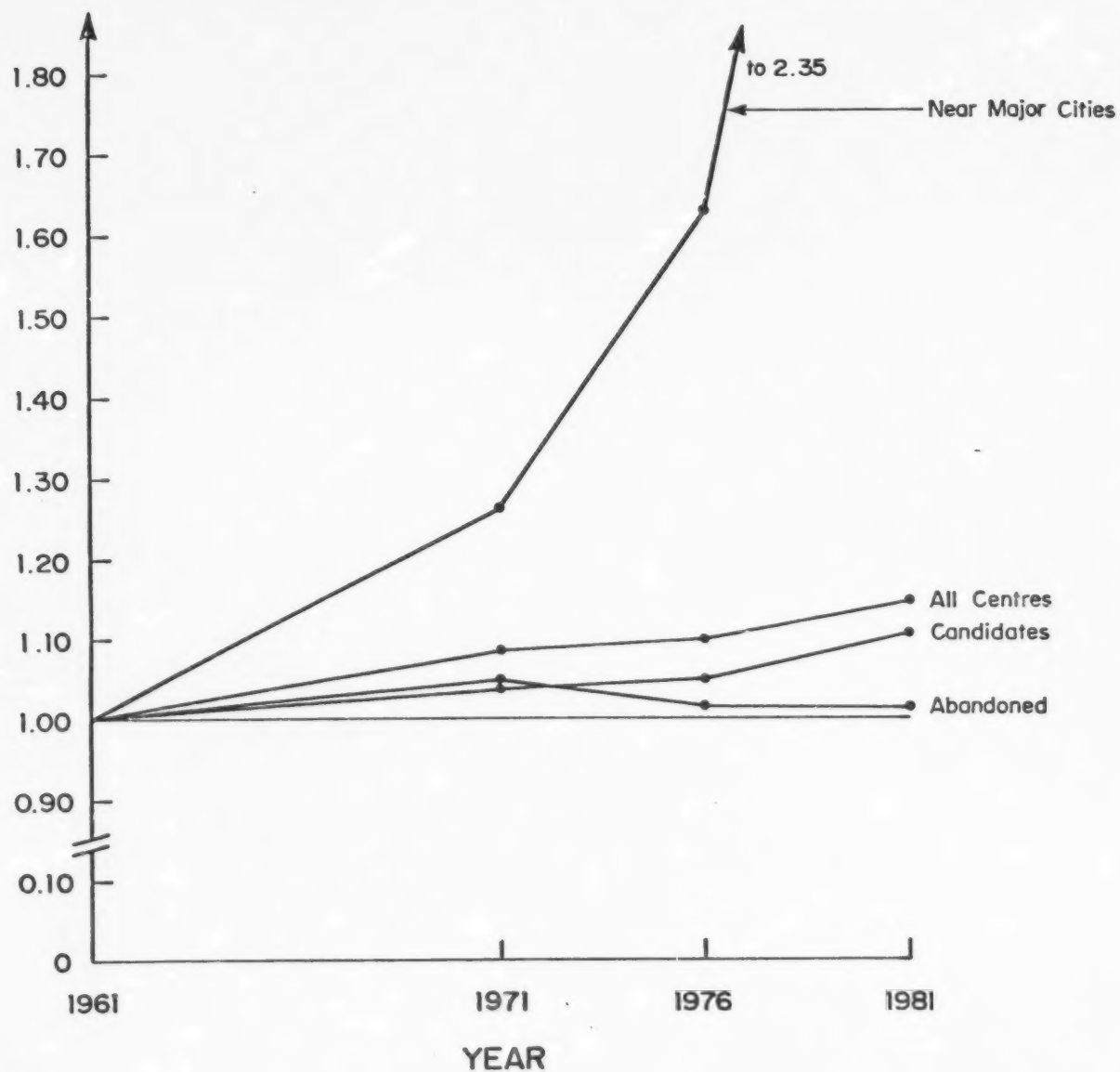


Figure 3.15. Index of Business Outlets of Saskatchewan Unincorporated
Centres Losing Rail Lines and/or Elevators 1971 - 1981.
1961 Base

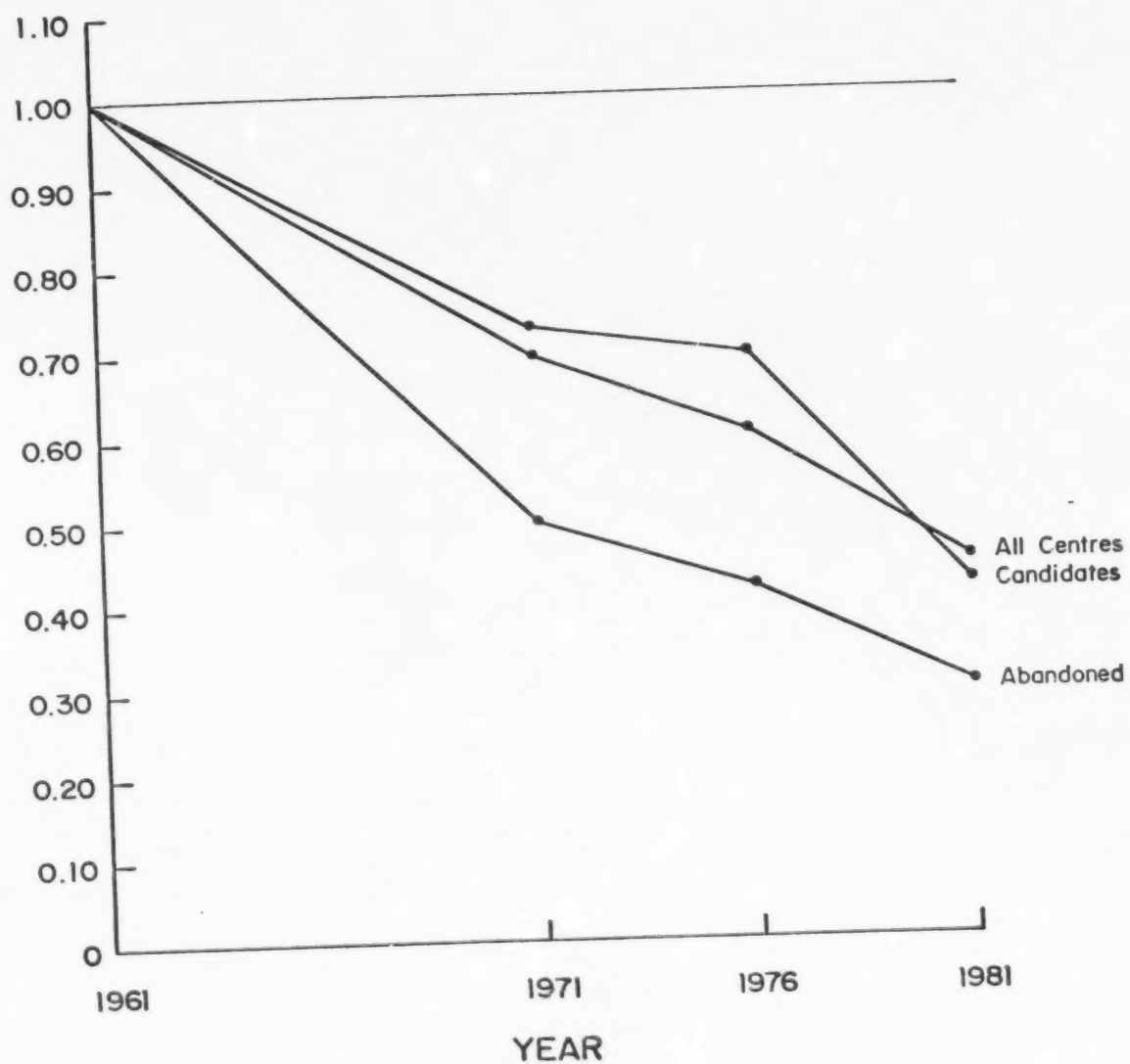


Figure 3.16. Index of Business Outlets of Saskatchewan Centres <200
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

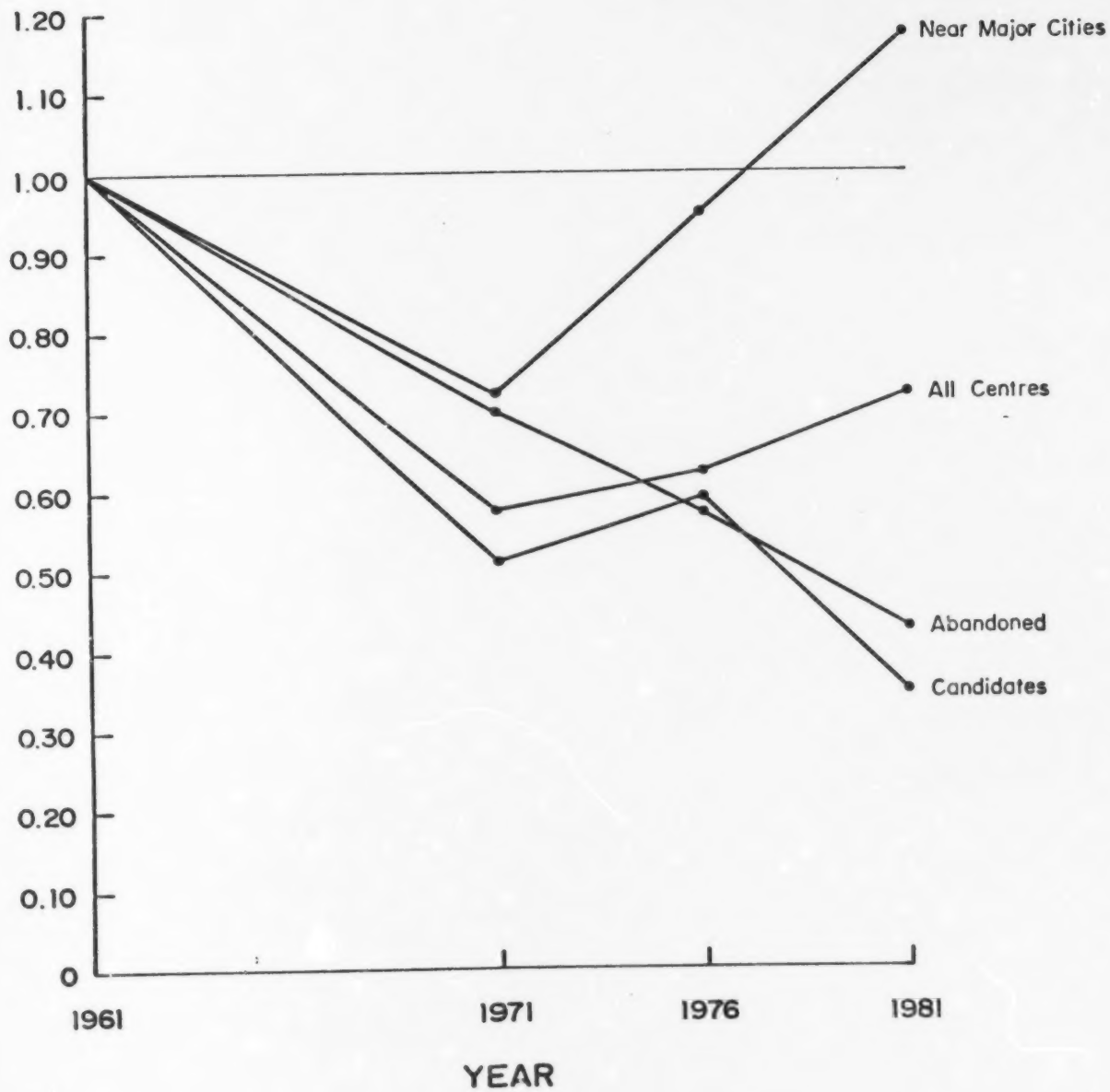


Figure 3.17. Index of Business Outlets of Saskatchewan Centres
200-499 Losing Rail Lines and/or Elevators 1971 - 1981.
1961 Base

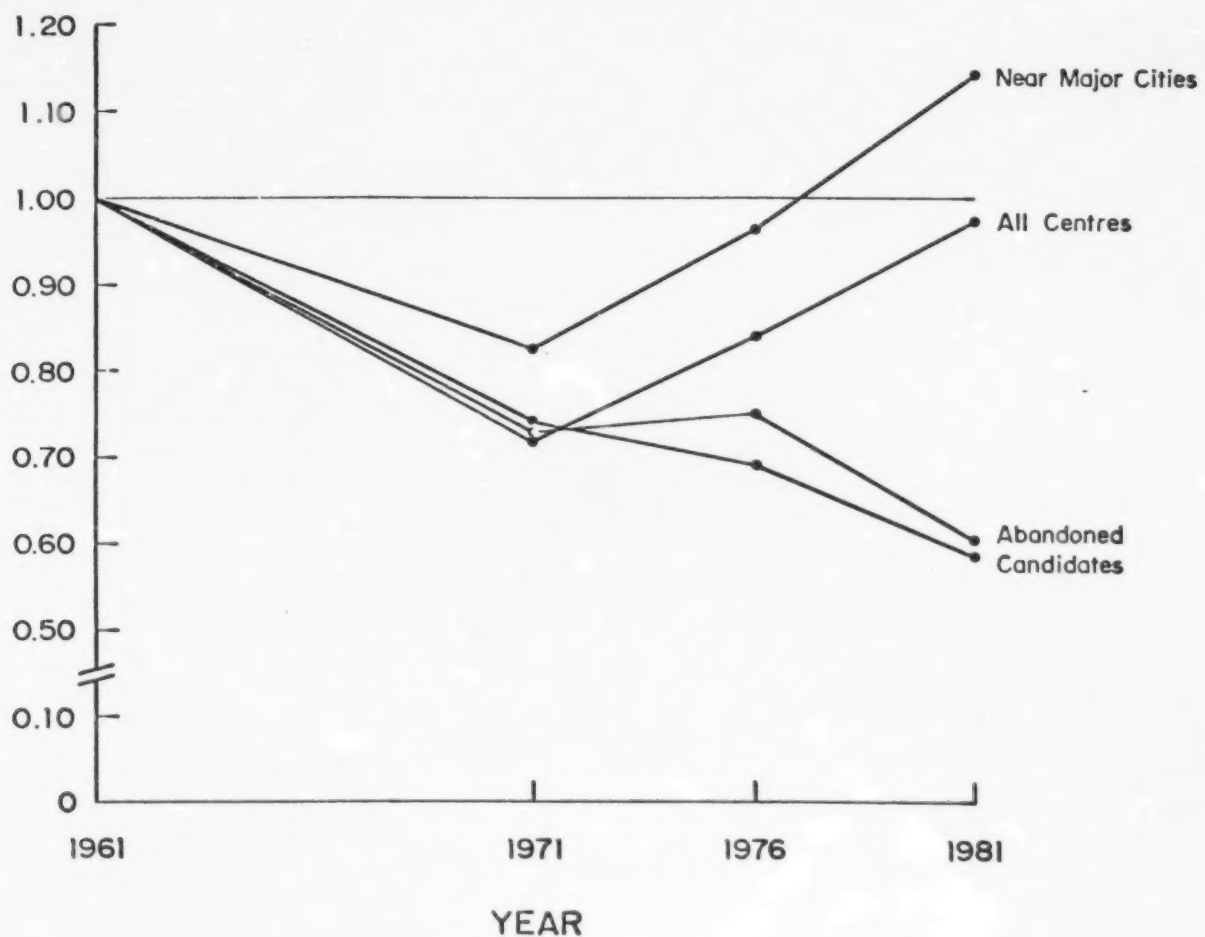


Figure 3.18. Index of Business Outlets of Saskatchewan Centers
500 - 999 Losing Rail Lines and/or Elevators 1971 - 1981
1961 Base

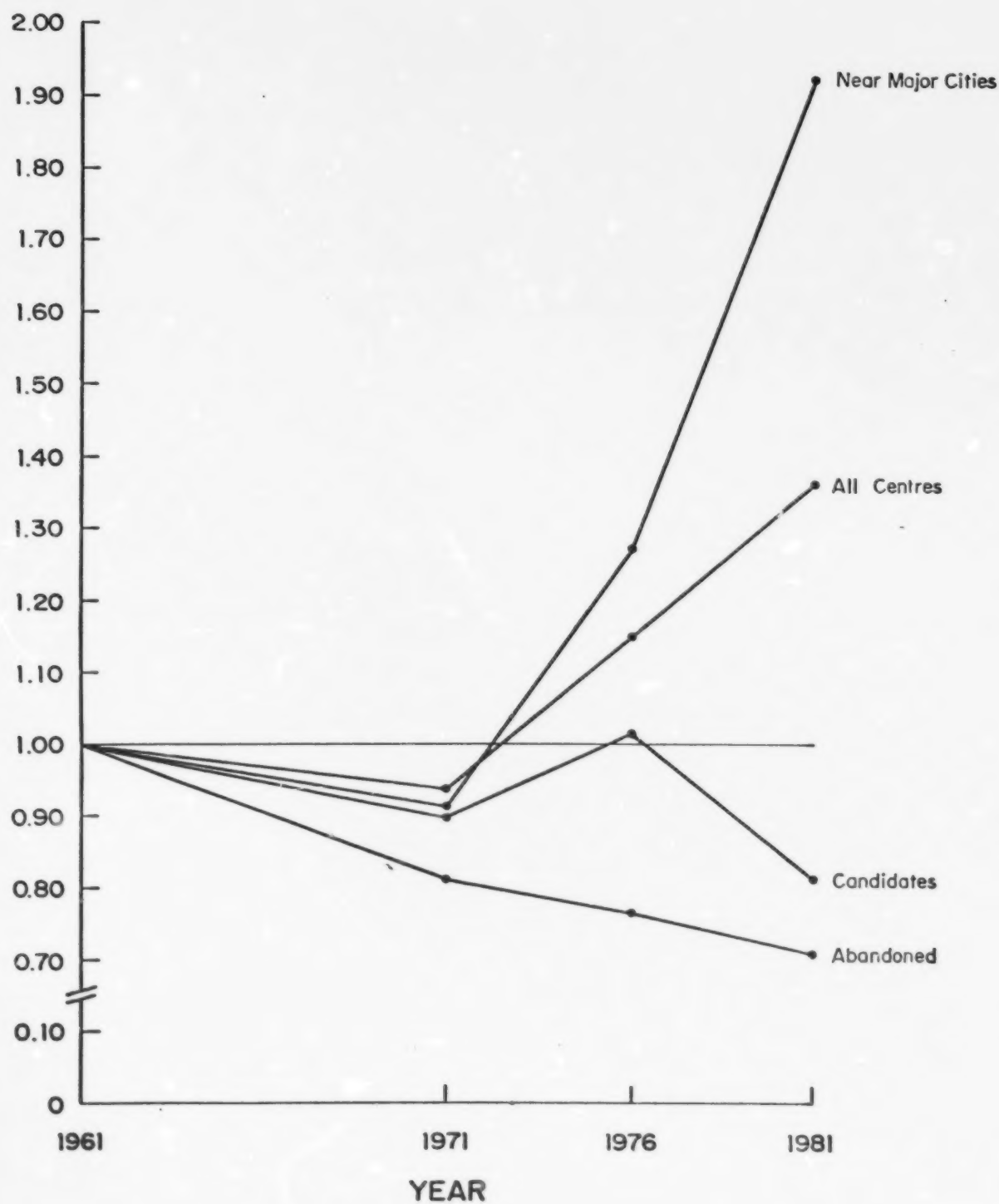


Figure 3.19. Index of Population of Alberta Unincorporated Centres
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

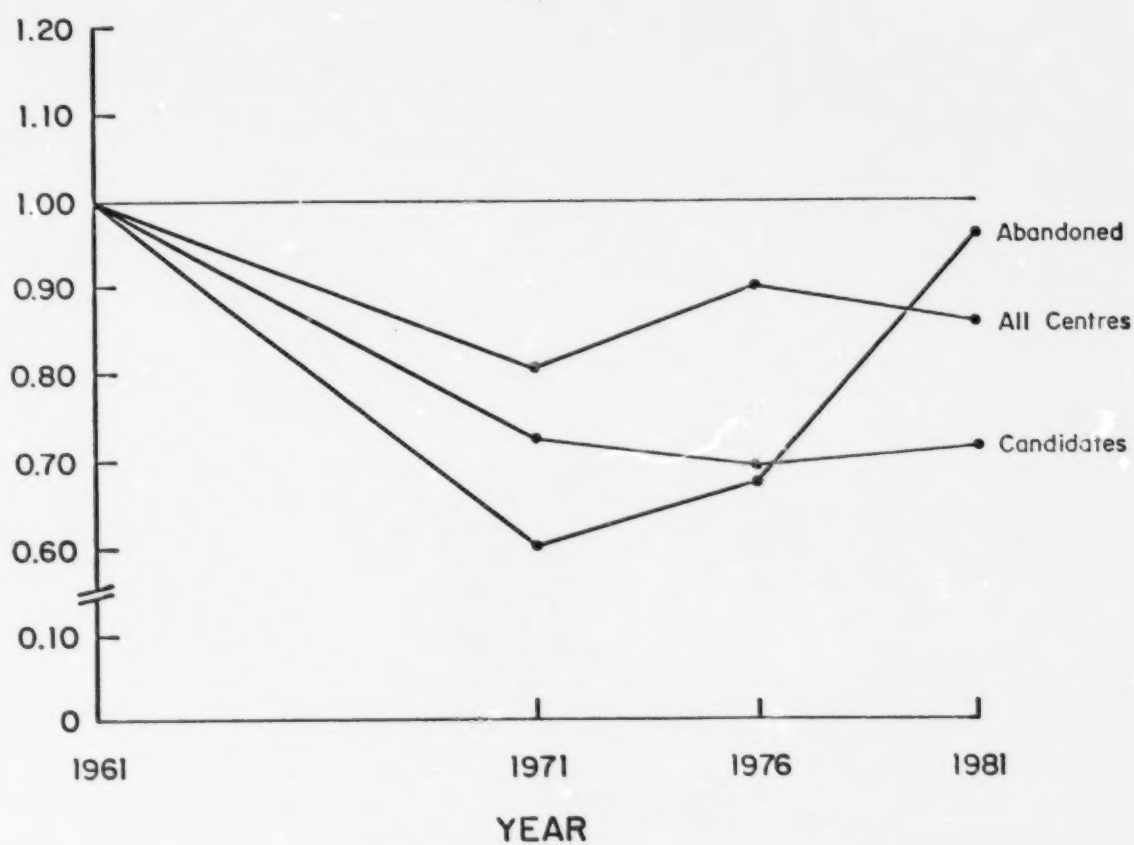


Figure 3.20. Index of Population of Alberta Centres <200 Losing 3-32
Rail Lines and/or Elevators 1971-1981. 1961 Base

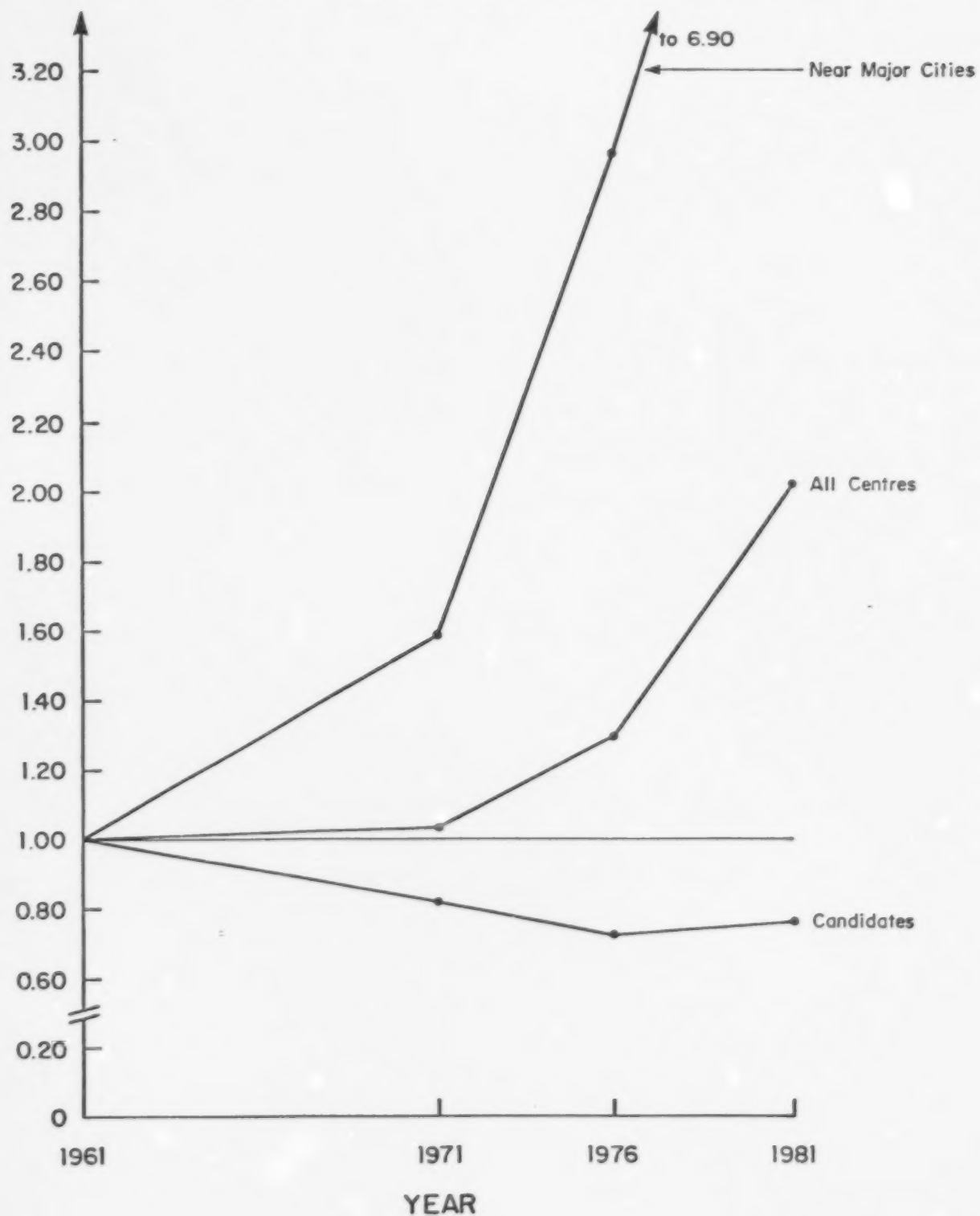


Figure 3.21. Index of Population of Alberta Centres 200-499
Losing Rail Lines and/or Elevators 1971-1981.
1961 Base

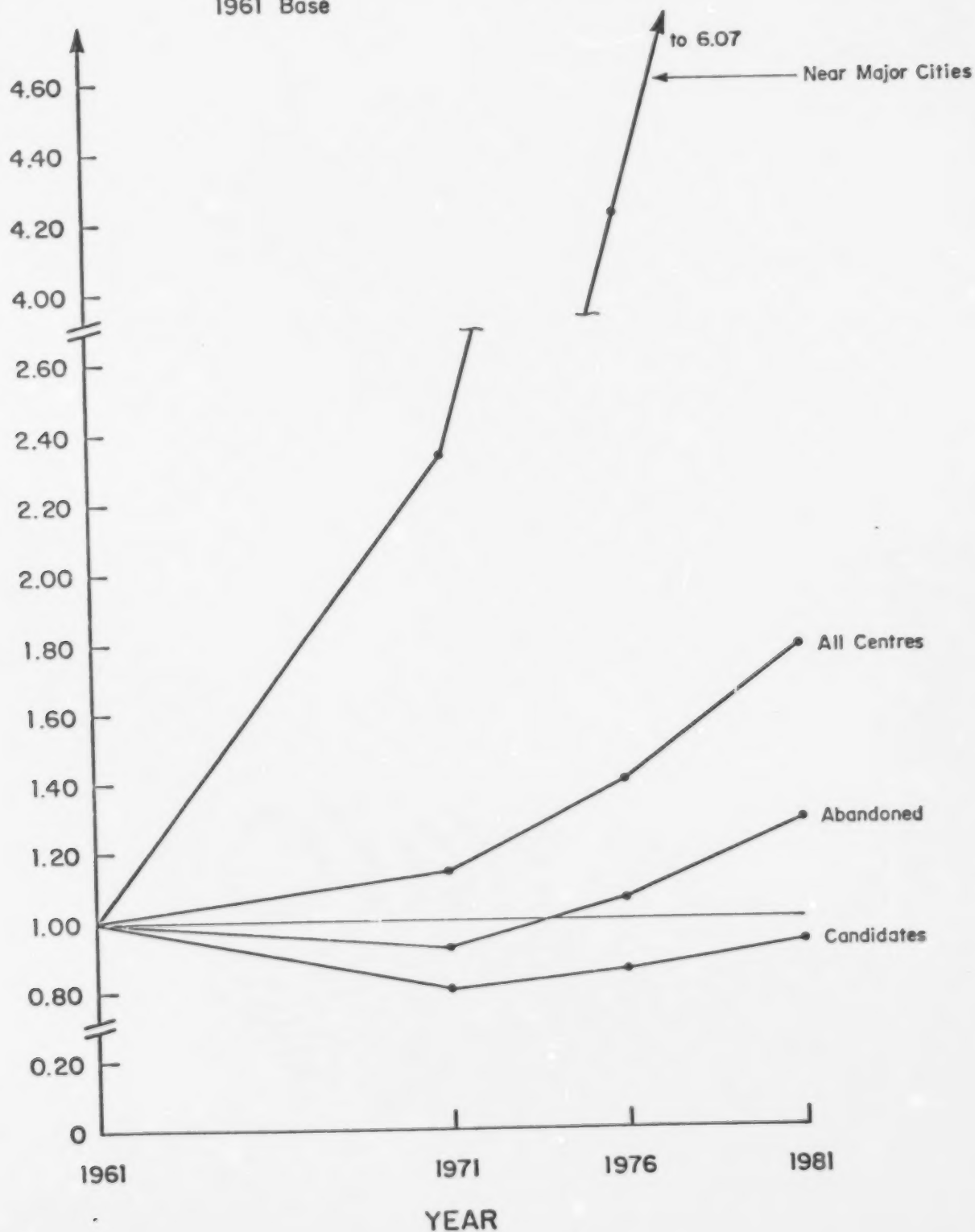


Figure 3.22. Index of Population of Alberta Centres 500-999
Losing Rail Lines and/or Elevators 1971-1981.
1961 Base

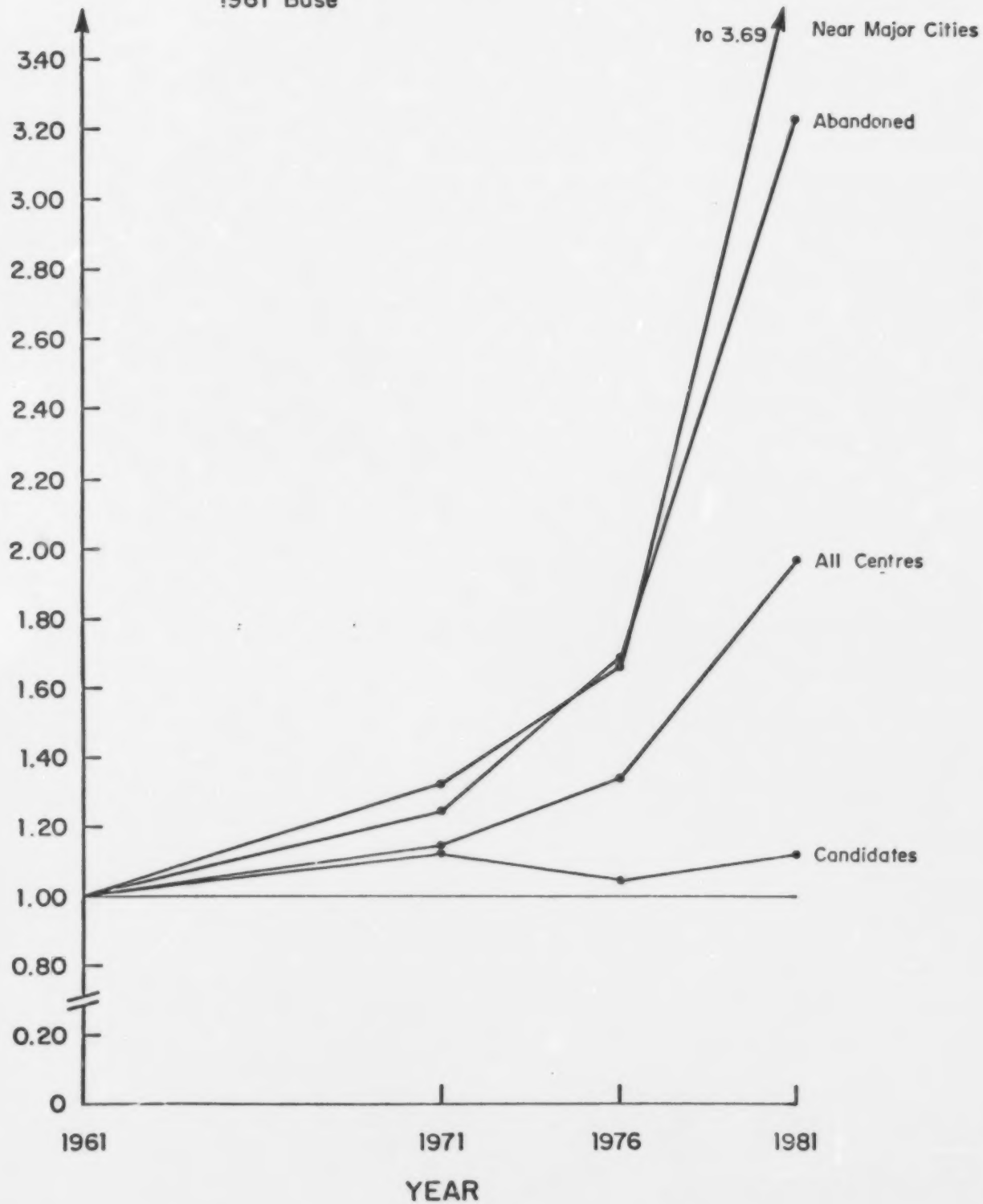


Figure 3.23. Index of Business Outlets of Alberta Unincorporated Centres Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

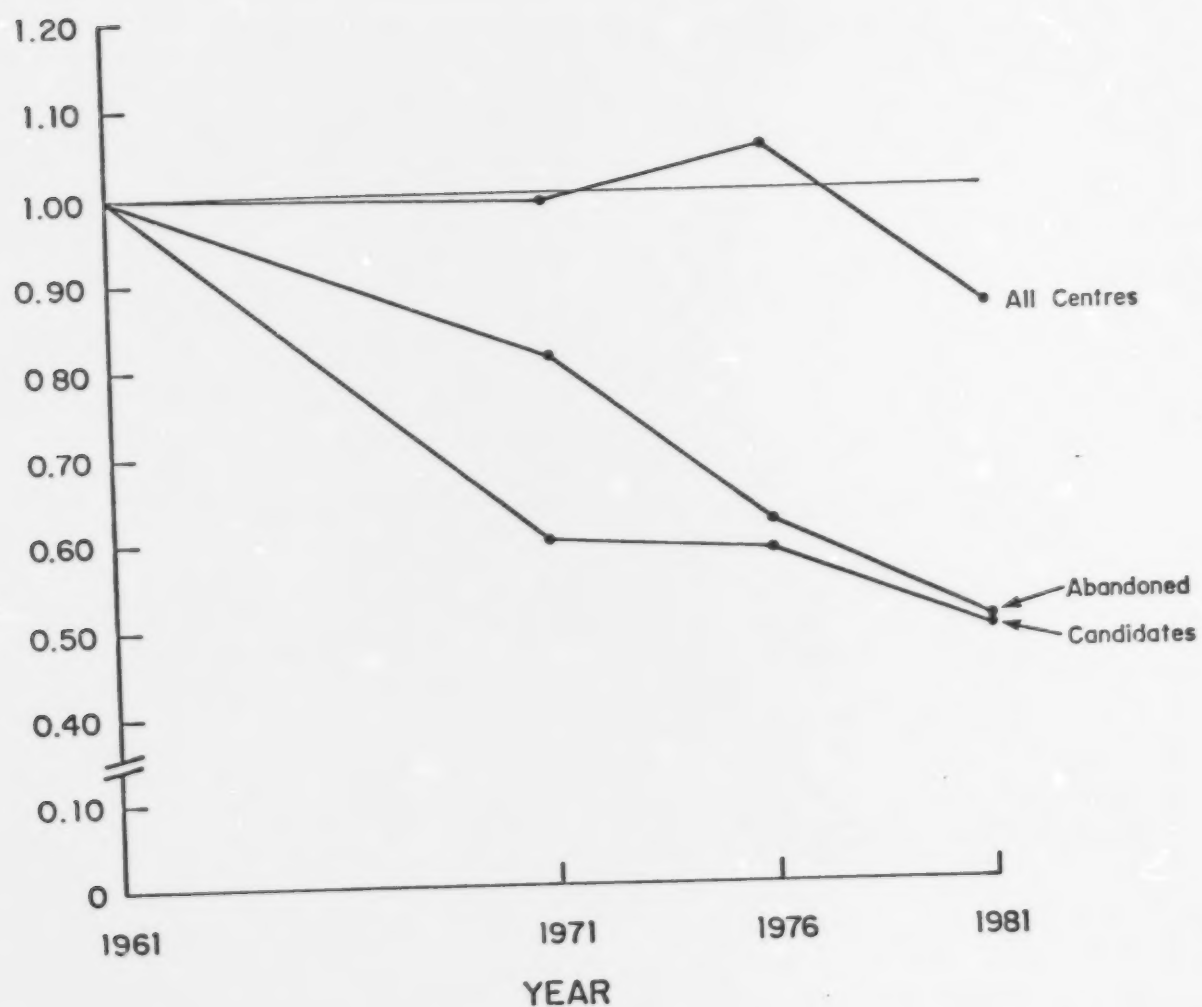


Figure 3.24. Index of Business Outlets of Alberta Centres <200
Losing Rail Lines and/or Elevators 1971-1981.
1961 Base

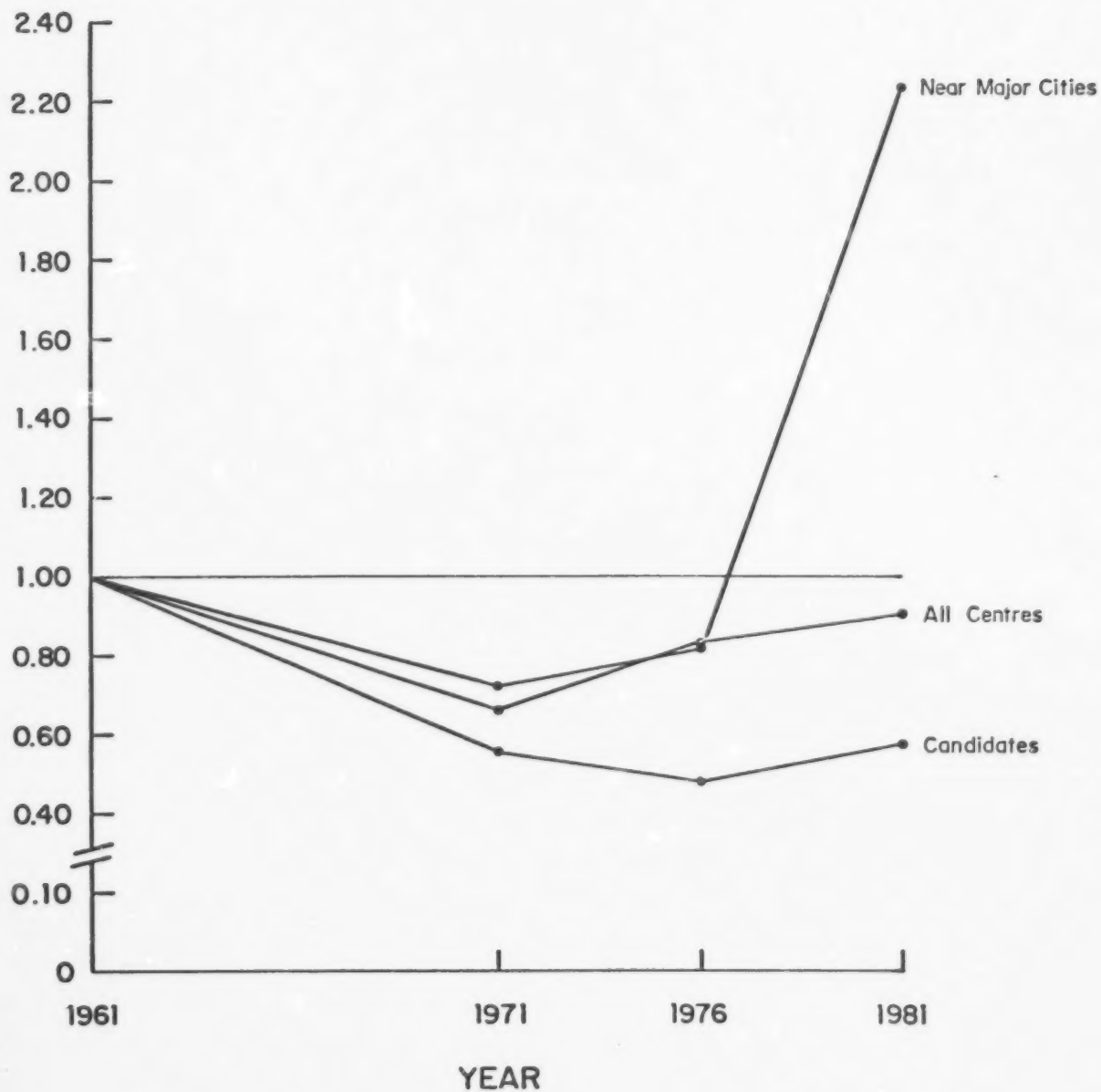


Figure 3.25. Index of Business Outlets of Alberta Centres 200-499
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base

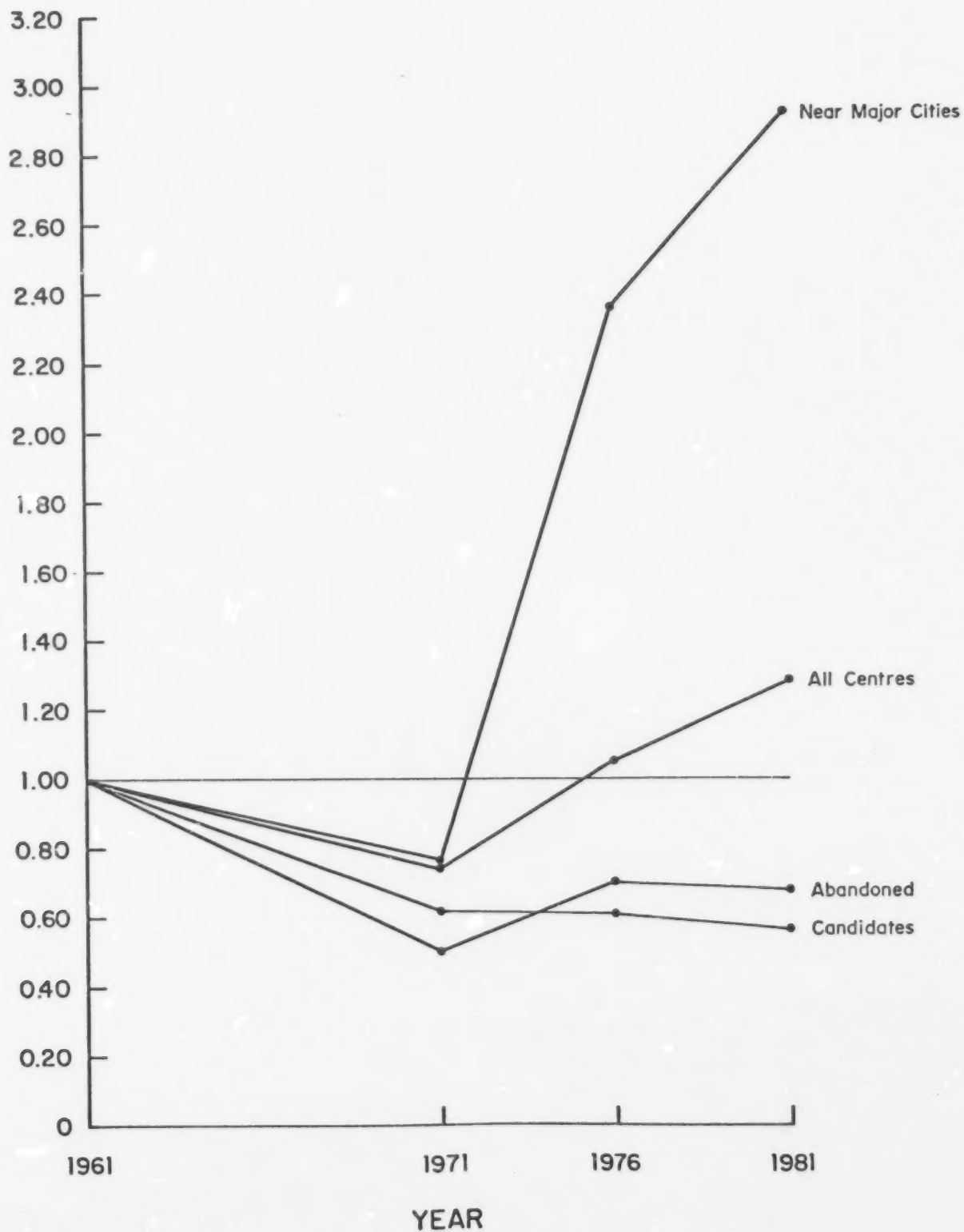
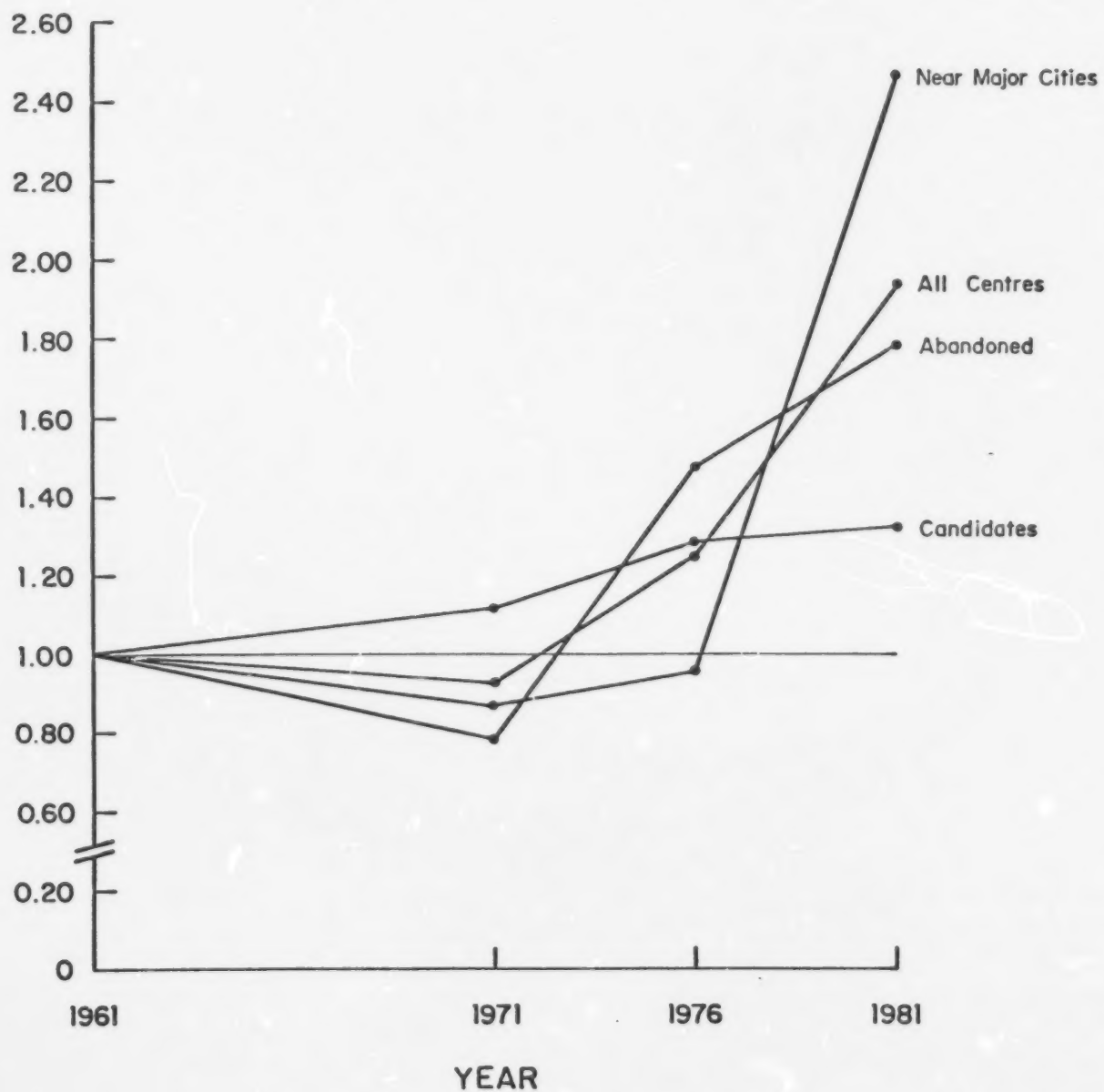


Figure 3.26. Index of Business Outlets of Alberta Centres 500-999
Losing Rail Lines and/or Elevators 1971-1981. 1961 Base



CHAPTER 4
FUNCTIONAL ANALYSIS OF SMALL COMMUNITIES
IN THE PRAIRIE REGION
1961-1981

THE CONCEPTUAL FRAMEWORK

Central place theory is the theory which was developed to explain the size, spacing and function of communities in a trade centre system.¹

The centre's primary economic function is to act as a service centre for the surrounding rural area, providing it, and its own inhabitants of course, with services such as retail trade, banking, professional and administrative services, education, health, and entertainment.

Goods and services are provided from central locations because, on the demand side, a minimum threshold, defined in terms of population and income, must be met in order for the activity to exist at all. This threshold is realized when sales are just sufficient for the firm supplying the service to earn a normal profit. The presence of economies of scale, however limited in some trade and service activities, defines the minimum viable size of the activity and the maximum number of outlets of that type that a given population could support. Agglomeration economies cause these activities to cluster

¹August Lösch and Walter Christaller, two German scholars developed this theory in the 1930s. Modern summaries and extensions abound, many of which are listed in the bibliography.

rather than disperse.

The area over which a central function is provided from a given location, called its range, is determined primarily by the cost of delivering the product to locations removed from the centre or, alternatively, by the time and money costs incurred by consumers travelling to the centre.

To illustrate the concepts of threshold and range in another way, assume that transportation is possible in all directions from the central place at the same cost per unit of distance. Then the threshold of a central function can be represented by the smallest ring containing the demand necessary to make the supply viable. The range can be shown by a second, concentric ring, forming the outer boundary of the market area.

Since the threshold and range differ between activities, a hierarchical functional structure results. Activities with the lowest demand thresholds, such as gasoline stations and general stores, will be found in all central places. Those requiring larger populations to satisfy their thresholds will be found only in fewer and larger communities. Further, since the range of higher order functions necessarily exceeds those of lower order functions, their market areas will contain those of several smaller places. Figure 4-1 illustrates how n -orders of functions are provided by m -levels of centres. A centre of level $m-3$, for example, would provide $n-3$ order of services to those $m-4$ and lowest level centres within its market area.

Listortions from the theoretical model occur because of several common phenomena. Rugged topography or uneven resource distribution,

FIGURE 4-1 n-ORDERS OF FUNCTIONS PROVIDED BY m-LEVELS OF CENTRES

Order of Function	Level of Centre					
	lowest	m-4	m-3	m-2	m-1	m
n						x
n-1					x	x
n-2				x	x	x
n-3			x	x	x	x
n-4		x	x	x	x	x
lowest	x	x	x	x	x	x

for example, lead to uneven population distribution and to transportation systems which provide better access to some areas than others.

Thus while the precision of the relationships defined in the theoretical model are not to be expected in reality, the functional interdependence between the centre and its hinterland as well as the functional and spatial hierarchical systems are nearly universal. For these reasons the central place model remains the most useful general framework for the analysis of trade centre systems.

CLUSTER ANALYSIS

In order to group the communities under analysis into functional categories for 1961 and 1981 a cluster analysis program was utilized.² Cluster analysis is a classificatory technique designed to select subsets of mutually similar objects from the set of all such objects. Through a complex computer algorithm, this program is able to evaluate, compare and ultimately group centres on the basis of their similarity in terms of the functions used to describe them. This is a more satisfactory method of grouping centres than either population or number of business outlets because, in addition to considering both of these, the clustering technique also considers the types of functions performed in assigning a centre to a group. Thus places are not necessarily grouped according to population size or number of business outlets but, rather, according to what they do. Further, in comparing functional categories through time, centres are allowed to move up or down in the hierarchy as their particular status as a trade centre alters.

In the case at hand provision was made to describe the communities in terms of their populations; 27 commercial functions representing, in condensed form, the entire Standard Industrial Classification code; and five special characteristics: doctors, hospitals, special health care facilities, schools and grain elevators. These data were collected for both 1961 and 1981 for all unincorporated communities which were over 50 in population in 1961 and which also appeared, regardless of size, in

²D. Wishart, Clustan User Manual, 3rd ed. (Edinburgh: Program Library Unit, Edinburgh University, 1978).

the 1981 census. Similar data were collected for both dates for all incorporated communities which were under 1,000 in population in 1961. All communities within a province, incorporated and unincorporated alike, were simultaneously evaluated during the formation of the clusters. Six clusters were separately formed: two for each Prairie province, one for 1961 and one for 1981. The results of these groupings are described and analyzed in the following sections.

DESCRIPTION OF FUNCTIONAL CATEGORIES

Three functional categories were identified for each province for both 1961 and 1981. The number of centres in each group, their average populations and average number of businesses are shown in Tables 4-1 and 4-2. In Tables 4-3 through 4-8 the average number of businesses, by type, are shown for each of the 1961 and 1981 clusters.

In terms of descriptive names these three categories correspond reasonably well with the classification minimum convenience centre, full convenience centre and partial shopping centre, respectively, for the largest through the smallest groupings. These descriptors are frequently used in studies of trade centre systems and are suggestive of the functional status of, and roles played by, the communities so designated.

Modest variations in terms of the size and number of businesses as well as in functional structure can be observed between provinces within each category. This is to be expected because of differences in population density, types of agriculture, other rural developments,

TABLE 4-1 SUMMARY DESCRIPTIONS OF 1961 FUNCTIONAL CATEGORIES—PRAIRIE PROVINCES

Type of Centre	No. of Centres	Population		Businesses	
		Mean	S.D. ¹	Mean	S.D. ¹
Manitoba					
Part. Shop.	26	700	180	36.3	8.3
Full Conv.	63	364	169	17.1	4.9
Min. Conv.	130	144	83	4.8	3.3
Saskatchewan					
Part. Shop.	88	607	174	28.2	6.6
Full Conv.	179	302	107	15.2	3.9
Min. Conv.	282	122	58	5.1	2.8
Alberta					
Part. Shop.	35	650	167	38.9	6.2
Full Conv.	77	326	130	21.4	5.7
Min. Conv.	147	121	79	5.9	3.7

¹ Standard deviation. Two thirds of the communities in any classification have populations and number of businesses which fall within one standard deviation above or below the mean.

government programs and the overall rates of growth of the provincial economies.

It is obvious, from Tables 4-3 through 4-8, that the centres grouped into the minimum convenience category consist of the ones with the weakest functional structures while those contained in the partial shopping centre category are the strongest. To relate this discussion to that of the preceding chapters, Table 4-9 has been constructed which

TABLE 4-2 SUMMARY DESCRIPTIONS OF 1981 FUNCTIONAL CATEGORIES—PRAIRIE PROVINCES

Type of Centre	No. of Centres	Population		Businesses	
		Mean	S.D. ¹	Mean	S.D. ¹
Manitoba					
Part. Shop.	12	888	156	42.6	9.3
Full Conv.	49	514	219	20.7	6.8
Min. Conv.	158	144	124	5.0	4.1
Saskatchewan					
Part. Shop.	38	963	242	32.7	8.9
Full Conv.	130	453	183	14.6	4.8
Min. Conv.	381	112	95	3.1	2.8
Alberta					
Part. Shop.	28	1,124	484	49.7	17.6
Full Conv.	56	500	280	21.2	9.6
Min. Conv.	175	140	124	5.1	4.3

¹ Standard deviation. Two thirds of the communities in any classification have populations and number of businesses which fall within one standard deviation above or below the mean.

identifies the communities by population size contained within each functional classification. There is a general correspondence between population size and functional classification, of course, but it is clearly not direct. Several centres, intermediate in population size but with a strong trade centre role, are grouped into the partial shopping centre functional classification. Centres of similar population, but weak as trade centres, are grouped into the lowest

TABLE 4-3 AVERAGE NUMBER¹ OF BUSINESSES OF VARIOUS TYPES
BY 1961 FUNCTIONAL CATEGORIES—MANITOBA

	Min. Conv.	Full Conv.	Part. Shop.
Service to Consumers			
Furniture	—	—	0.20
Dry Cleaning	—	—	0.10
Clothing	—	0.13	0.77
Home Decorating	—	0.20	0.61
Personal Service	—	0.11	0.65
Specialty Retail	—	0.14	0.96
Locker	—	0.10	0.81
Drug Store	—	0.30	1.20
Specialty Food	—	0.60	1.50
Bank	—	0.35	1.00
T.V. Repair	—	0.49	0.73
Car Wash	0.18	0.54	1.73
Auto Sales	0.11	0.59	1.65
Grocery	0.25	0.78	1.35
Hotel	0.11	0.71	1.15
Restaurant	0.26	1.30	2.54
Auto Repair	0.88	2.16	3.12
Gas Station	0.31	0.73	1.40
General Store	1.33	2.71	3.12
Production—Service to Producers			
Agriculture—Primary	0.93	0.13	0.50
For Hire Transport	0.11	0.90	1.15
Manufacturing	0.18	0.37	1.50
Bulk Fuel	—	0.10	0.31
Contractor	0.73	0.84	2.12
Building Materials	0.23	1.10	2.70
Implement Dealer	0.39	1.76	3.50

¹ Values less than 0.10 omitted.

TABLE 4-4 AVERAGE NUMBER¹ OF BUSINESSES OF VARIOUS TYPES
BY 1981 FUNCTIONAL CATEGORIES—MANITOBA

	Min. Conv.	Full Conv.	Part. Shop.
Service to Consumers			
Personal Service	—	—	0.42
Dry Cleaning	—	—	0.10
T.V. Repair	—	0.10	0.10
F.I.R.E.	—	0.23	0.30
Furniture	—	—	0.33
Drug Store	—	0.20	0.91
Specialty Food	—	0.23	1.00
Car Wash	0.10	0.43	1.33
Home Decorating	—	0.47	1.67
Auto Sales	—	0.30	0.92
Clothing	—	0.33	2.10
Specialty Retail	0.10	0.47	1.80
Auto Repair	0.20	0.65	1.83
Bank	—	0.63	1.10
Restaurant	0.22	1.20	1.83
Hotel	0.12	0.65	1.33
Grocery	0.25	0.69	1.83
General Store	0.68	1.35	1.67
Gas Station	0.61	1.70	2.50
Producers—Service to Producers			
Bulk Fuel	0.10	0.29	0.83
For Hire Transport	0.21	0.86	2.20
Manufacturing	0.29	1.20	1.60
Implement Dealer	0.10	0.67	1.67
Building Materials	0.25	0.98	2.60
Agriculture—Primary	—	2.67	3.83
Contractor	0.22	4.25	7.00

¹ Values less than 0.10 omitted.

TABLE 4-5 AVERAGE NUMBER¹ OF BUSINESS OF VARIOUS TYPES
BY 1961 FUNCTIONAL CATEGORIES—SASKATCHEWAN

	Min. Conv.	Full Conv.	Part. Shop.
Service to Consumers			
Furniture	—	—	—
Dry Cleaning	—	—	0.17
Clothing	—	—	0.51
Home Decorating	—	0.14	0.43
Personal Service	—	0.15	0.57
Specialty Retail	—	0.20	0.40
Locker	—	0.29	0.75
Drug Store	—	0.21	1.00
Specialty Food	—	0.29	0.94
Bank	—	0.33	0.93
T.V. Repair	0.10	0.52	0.81
Car Wash	0.12	0.58	0.92
Auto Sales	0.10	0.58	1.68
Grocery	0.30	0.54	1.24
Hotel	0.37	0.94	1.15
Restaurant	0.30	1.22	1.93
Auto Repair	0.60	1.06	1.42
Gas Station	0.60	1.01	1.88
General Store	1.36	2.35	2.67
Production—Service to Producers			
Agriculture—Primary	—	—	0.10
For Hire Transport	—	0.13	0.18
Manufacturing	—	0.10	0.72
Bulk Fuel	0.10	0.34	0.33
Contractor	—	0.36	1.27
Building Materials	0.33	1.39	2.58
Implement Dealer	0.51	2.30	3.60

¹ Values less than 0.10 omitted.

TABLE 4-6 AVERAGE NUMBER¹ OF BUSINESSES OF VARIOUS TYPES
BY 1981 FUNCTIONAL CATEGORIES—SASKATCHEWAN

	Min. Conv.	Full Conv.	Part. Shop.
Service to Consumers			
Personal Service	—	—	—
Dry Cleaning	—	—	—
T.V. Repair	—	—	—
F.I.R.E.	—	—	0.16
Furniture	—	—	0.32
Drug Store	—	0.27	0.71
Specialty Food	—	0.25	0.63
Car Wash	—	0.25	0.68
Home Decorating	—	0.31	0.92
Auto Sales	—	0.25	1.48
Clothing	—	0.25	1.55
Specialty Retail	—	0.35	1.28
Auto Repair	—	0.42	1.21
Bank	—	0.63	1.00
Restaurant	0.10	0.83	1.26
Hotel	0.19	0.63	1.28
Grocery	0.18	0.69	1.40
General Store	0.44	0.93	1.16
Gas Station	0.49	1.42	1.55
Production—Service to Producers			
Bulk Fuel	—	0.34	0.68
For Hire Transport	—	0.43	1.29
Manufacturing	0.10	0.48	1.71
Implement Dealer	0.16	0.83	1.63
Building Materials	0.12	1.05	2.40
Agriculture—Primary	0.34	1.28	1.97
Contractor	0.49	2.58	6.30

¹ Values less than 0.10 omitted.

TABLE 4-7 AVERAGE NUMBER¹ OF BUSINESSES OF VARIOUS TYPES
BY 1961 FUNCTIONAL CATEGORIES—ALBERTA

	Min. Conv.	Full Conv.	Part. Shop.
Service to Consumers			
Furniture	—	—	0.11
Dry Cleaning	—	—	0.20
Clothing	—	0.20	0.97
Home Decorating	—	0.20	0.80
Personal Service	—	0.16	0.71
Specialty Retail	—	0.27	0.63
Locker	—	0.50	0.60
Drug Store	—	0.40	0.94
Specialty Food	—	0.65	1.20
Bank	—	0.50	1.00
T.V. Repair	—	0.44	0.80
Car Wash	0.20	0.74	1.23
Auto Sales	—	0.97	2.06
Grocery	0.23	0.76	1.71
Hotel	0.40	0.94	1.06
Restaurant	0.40	1.40	2.40
Auto Repair	0.52	1.04	1.86
Gas Station	0.96	2.21	3.30
General Store	1.40	2.10	3.10
Production—Service to Producers			
Agriculture—Primary	0.14	0.30	0.70
For Hire Transport	0.13	0.52	0.70
Manufacturing	0.10	0.50	1.63
Bulk Fuel	0.11	1.52	2.03
Contractor	0.16	0.84	2.74
Building Materials	0.40	1.91	2.50
Implement Dealer	0.50	2.55	4.20

¹ Values less than 0.10 omitted.

TABLE 4-8 AVERAGE NUMBER¹ OF BUSINESSES OF VARIOUS TYPES
BY 1981 FUNCTIONAL CATEGORIES—ALBERTA

	Min. Conv.	Full Conv.	Part. Shop.
Service to Consumers			
Personal Service	—	—	0.11
Dry Cleaning	—	—	0.14
T.V. Repair	—	0.25	0.30
F.I.R.E.	—	0.11	0.25
Furniture	—	0.25	1.10
Drug Store	—	0.32	0.96
Specialty Food	—	0.34	1.50
Car Wash	—	0.20	0.86
Home Decorating	—	0.25	0.85
Auto Sales	—	0.40	2.10
Clothing	—	0.34	2.43
Specialty Retail	—	0.32	1.25
Auto Repair	0.10	0.64	1.10
Bank	—	0.80	1.96
Restaurant	0.20	0.82	1.40
Hotel	0.25	0.57	1.82
Grocery	0.23	1.11	1.40
General Store	0.10	1.52	1.57
Gas Station	0.47		
Producers—Service to Producers			
Bulk Fuel	—	0.60	0.89
For Hire Transport	0.40	2.14	4.71
Manufacturing	0.15	0.98	2.71
Implement Dealer	0.10	0.43	1.21
Building Materials	0.25	1.21	2.14
Agriculture—Primary	1.03	3.40	6.30
Contractor	1.05	4.23	10.70

¹ Values less than 0.10 omitted.

TABLE 4-9 COMMUNITIES CONTAINED IN FUNCTIONAL CLASSIFICATIONS, PRAIRIE PROVINCES, BY SIZE GROUPS

	Minimum Convenience		Full Convenience		Partial Shopping	
	1961	1981	1961	1981	1961	1981
Manitoba						
Unincorporated	128	155	52	26	2	1
< 200	1	1	—	—	—	—
200 - 499	1	1	5	7	2	—
500 - 999	—	1	6	16	22	11
	130	158	63	49	26	12
Saskatchewan						
Unincorporated	140	140	—	—	—	—
< 200	124	146	29	7	—	—
200 - 499	18	94	143	90	28	5
500 - 999	—	1	7	33	60	33
	282	381	179	130	88	38
Alberta						
Unincorporated	126	125	2	3	—	—
< 200	21	23	11	9	—	—
200 - 499	—	26	58	36	7	3
500 - 999	—	1	6	8	28	25
	147	175	77	56	35	28

functional classification. As a result a much better defined trade centre hierarchy emerges.

ANALYSIS OF CHANGES IN FUNCTIONAL CATEGORIES, 1961-1981

In the review provided in Chapter 1 it was observed that centres in functional classifications at the lower end of the hierarchy in 1941 experienced substantial decline during the following 20 years. That this decline has continued through the 1960s and 1970s is obvious from the materials presented in Chapter 2 and in the preceding pages of this chapter. An explicit identification of the movement between functional classifications between 1961 and 1981 is provided in Table 4-10.

A rather interesting observation from this table is that over 50 percent of the centres in the full convenience and partial shopping classifications in Manitoba and Saskatchewan declined by at least one category during the past 20 years. Even in Alberta, 40 percent of the centres in these two classifications declined.³ The material presented in Chapter 2 implied, perhaps, a greater stability of the intermediate sized places and even growth of the majority of centres in the largest size group considered there. The information in Tables 4-9 and 4-10, however, indicates that some large and intermediate sized centres are declining while others are growing, with the losses of those declining being offset or more than offset by those gaining.

³Further, of the centres in the minimum convenience classification in 1961, well over one-half in each province experienced a loss in number of businesses during the following two decades.

TABLE 4-10 CHANGES IN THE PROPORTION OF TRADE CENTRES
BETWEEN FUNCTIONAL CLASSIFICATIONS, PRAIRIE
PROVINCES, 1961-1981

	1961 Functional Classification	1981 Functional Classification		
		Min. Conv.	Full Conv.	Part. Shop.
Manitoba	Min. Conv.	95.4	4.6	—
	Full Conv.	52.4	44.4	3.2
	Part. Shop.	3.8	57.7	38.5
Saskatchewan	Min. Conv.	97.9	2.1	—
	Full Conv.	58.1	40.8	1.1
	Part. Shop.	1.1	58.0	40.9
Alberta	Min. Conv.	98.0	2.0	—
	Full Conv.	40.3	50.6	9.1
	Part. Shop.	—	40.0	60.0

One consequence of this pattern of decline has been an increase in the distance between full convenience centres and between partial shopping centres. For partial shopping centres which provide a nearly complete range of everyday community, consumer, and producers services, the average distance between them in 1961 was 31, 27 and 30 miles for Manitoba, Saskatchewan and Alberta respectively. By 1981 these respective distances had increased to 49, 40 and 33 miles. Thus in terms of driving time, few rural dwellers would be more than 30 minutes from a partial shopping centre. The distance between minimum convenience centres, on the other hand, decreased as their numbers grew through the decline of previously higher order places and as no

communities being studied were observed to expire between 1961 and 1981.

The most interesting data, and the most important in explaining changes in the provincial trade centre systems during the past 20 years, is found in Tables 4-3 through 4-8. The functional structures of the three types of centres for both 1961 and 1981 are described in these tables and a comparison of these structures for the two end dates is very revealing.⁴ For each type of centre in each province the number of firms in those activities providing services to consumers declined between 1961 and 1981. However the number of firms in sectors providing services to producers declined even more. With but one exception, the percentage declines were greatest in the minimum convenience classification and least in the partial shopping category. On the other hand, the number of producers in each classification, with one exception again, increased during these two decades. Full convenience centres recorded the greatest percentage increases in producers in each province but, aside from this, the pattern of gain was not systematic between classifications or between provinces. These changes are recorded in index form in Table 4-11.

It is apparent from Tables 4-3 through 4-8 and 4-11 that minimum convenience centres in the 1980s provide only the most rudimentary services to consumers. Most have either a general store or a grocery store in Manitoba and Saskatchewan but only one-half do in Alberta.

⁴The tables are set up to be identical for each province for a given year. The functions are ordered from least common (highest order) to most common (lowest order) using total number of firms in each activity in Saskatchewan at the given date for the basis of the ordering.

TABLE 4-11 1981 INDEXES¹ OF TYPES OF BUSINESSES BY
FUNCTIONAL CLASSIFICATION—1961 BASE

	Manitoba	Saskatchewan	Alberta
Services to Consumers²			
Minimum Convenience	66	36	33
Full Convenience	81	72	61
Partial Shopping	94	86	85
Services to Producers³			
Minimum Convenience	73	30	35
Full Convenience	66	55	36
Partial Shopping	78	72	49
Producers⁴			
Minimum Convenience	37	—	496
Full Convenience	401	808	498
Partial Shopping	278	496	423

¹ The indexes are derived from Tables 4-3 to 4-8. In those tables values of less than 0.10 are omitted as they were in developing this table.

² Based on entries under the Services to Consumers classification in Tables 4-3 through 4-8.

³ Implement dealers, bulk fuel dealers and firms selling building materials.

⁴ Agriculture and other primary industries, contractors, manufacturers and for hire transport firms.

About half of them still have gasoline stations in all provinces and about half of them provide one additional consumer service, most probably a restaurant or a hotel. Minimum convenience centres as a group have just about completely ceased to serve the producer. In the

714 centres in the minimum convenience classification in the three provinces in 1981, there were 55 bulk fuel dealers, 69 implement dealers and 130 firms selling building materials. Most (648) still have elevators and serve as grain delivery points and nearly all in Saskatchewan and Manitoba have at least one producer in agriculture, transport, construction or manufacturing. In Alberta there were 2.63 producers per minimum convenience centre, outnumbering consumer services 2 to 1.

Full convenience centres offer more in terms of consumer services. Gasoline stations, grocery or general stores, and a hotel or a restaurant are found in all of the 235 such places. Banks and auto repair shops are available in two out of three full convenience centres. In addition the average community in this classification has two or three higher order consumer services for a total of 7 or 8 functions provided by between 10 to 13 outlets. While services to producers have declined to as little as one-third of their 1961 levels in Alberta, most still offer enough to be locally important. In 1981, virtually all offered building supplies, more than two-thirds had implement dealerships in Manitoba and Saskatchewan while over 40 percent did in Alberta. Sixty percent had bulk fuel outlets in Alberta and around 30 percent offered this service in the other two provinces. In Alberta, 90 percent of these communities have elevators and over 95 percent do in Manitoba and Saskatchewan. As a class, full convenience centres experienced the greatest percentage increase in numbers of producers of the three categories studied. It is possible, though far from certain, that the increases in such activities have generated enough employment

to offset their declining role as centres providing services to consumers and producers, thus adding to community viability even as the trade centre function diminishes.

The 78 partial shopping centres play an important role in the rural economy of the Prairies. Most offer approximately 14 different consumer services. In Alberta and Manitoba multiple outlets of the same functions are somewhat more common than in Saskatchewan, accounting for more outlets in those provinces, but all provide about the same services. Commonly, 1 or 2 other higher order consumer services are offered as well. In addition, all provide services to producers, with multiple outlets of firms selling building materials or farm implements common and more than two-thirds having bulk fuel dealers. It may be the case for partial shopping centres that the decline in number of consumer and producer services shown in Table 4-11 has been offset by increased size of outlets or volume of business of those remaining so that the decline is more apparent than real. Further adding to the viability of partial shopping centres was an increase in number of producers between 1961 and 1981 which, while smaller in percentage terms than the increase experienced by full convenience centres, was larger in absolute numbers.

One additional comparison remains and that is of selected special services and community facilities. These are listed in Table 4-12. This comparison more or less parallels the previous one. Except for grain elevators, the majority of minimum convenience centres offer no special services or community facilities of the type considered here. Full convenience centres typically provide educational facilities through the high school level in Saskatchewan and Alberta and nearly

TABLE 4-12 PERCENT¹ OF COMMUNITIES BY FUNCTIONAL CATEGORY
OFFERING SELECTED FACILITIES, PRAIRIE
PROVINCES, 1981

	Special Health Care	Hospital	Doctor	High School	Elevator
Manitoba					
Min. Conv.	—	—	—	—	85
Full Conv.	31	35	49	59	90
Part. Shop.	100	92	100	100	100
Saskatchewan					
Min. Conv.	—	—	—	14	92
Full Conv.	—	32	52	92	95
Part. Shop.	82	68	100	100	92
Alberta					
Min. Conv.	—	—	—	11	93
Full Conv.	23	16	38	84	96
Part. Shop.	71	64	100	86	96

¹ Values less than 10 percent omitted.

60 percent do in Manitoba. On average, however, these communities do not provide a full range of health facilities with fewer than one-half offering doctors services (except in Saskatchewan) and fewer than one-third offering hospital or special health care facilities. Partial shopping centres come closer to providing a full range of educational and health services and therefore are more attractive as places to live in or for local residents to retire to.

SUMMARY

The analyses of small communities and trade centre systems have produced some interesting observations. Some reflect an apparent continuation of trends going back to the 1950s and earlier. Others represent a modification or even reversal of historic patterns.

In spite of an apparent increase in the number of businesses locating in small communities in the 1970s, the trade centre system has continued to evolve toward a hierarchy which has many fewer centres in the lower intermediate classifications and many more at the very bottom. The number of communities classified as full convenience and partial shopping centres dropped by more than one-third between 1961 and 1981 while, because of this decline, the number of minimum convenience centres increased by more than 25 percent. Full convenience and partial shopping centres became farther apart while the average distance between minimum convenience centres decreased.

The observed gain in number of businesses represented an increase in producers which was great enough to offset the simultaneous loss of outlets serving both producers and consumers. Some of the growth in number of producers may have been more apparent than real as when a farmer already living in or near a small community is included in the statistical source for the first time. On the other hand, some of the gain in producers has undoubtedly added some stability to the centres in which they have situated, as when a small manufacturing operation is opened. In such instances the gain assists in maintaining community viability even as its trade centre role diminishes.

CHAPTER 5
CAUSES OF CHANGE IN POPULATION AND TRADE
CENTRE STATUS OF SMALL COMMUNITIES
IN THE PRAIRIE REGION
1961-1981

INTRODUCTION

It has been observed that the loss of population by small communities in either relative terms, as in Alberta, or in absolute terms as in Manitoba and Saskatchewan continued through the 1960s. But, except for places that had become very small or which were poorly situated, the decline was arrested and even replaced by population growth during the 1970s. At the same time, the trade centre status of the majority of communities under study continued to erode although all but the smallest and most poorly situated places gained enough activities in the producing sectors to offset, numerically at least, the loss of trade centre functions. In this chapter an attempt will be made to identify the factors or influences which can assist in interpreting these observations.

**CHANGES IN PRODUCTION, TRANSPORTATION,
COMMUNICATIONS AND DISTRIBUTION**

New ways of doing things are always being developed. The motivation for much of this development is to find ways of producing more for the same cost or to find ways of reducing the cost of achieving a given objective. Implementation of new methods frequently involves

reorganization. In the process of reorganization capital may be substituted for labour or a new generation of equipment for an older one. Not infrequently, it is found that new techniques achieve their most cost-effective utilization at greater levels of output than was characterized by the system being replaced, with one possible result being fewer and larger producers. Sometimes the incidence of some of the costs associated with reorganization are shifted from one party to another. When this happens, the general gain for society made possible by doing things in a new way may impose a burden on individuals or groups which actually makes them worse off.

Anyone familiar with the rural economy of the Prairies even 20 years ago will recognize that enormous changes have taken place in production, transportation, communications and distribution technology during the intervening years. To a large extent, it is the ramifications of these changes that have been discussed in the previous chapters. In this chapter some of these changes will be explicitly identified and, without attempting to analyze in any detail why these changes occurred, their influence on small communities and the trade centre system will be explored.

Agriculture

Agriculture has historically been the major activity in the rural economy of the Prairies. Thus it is to be expected that changes in this industry would have major consequences for the sectors serving it or farm people as consumers. Most readers will be familiar, at least in a general way, with the consolidation that has characterized this industry

for at least the past four decades.

To provide a historical perspective on the change in labour requirements, agricultural labour force statistics for the 1941-1981 period are shown in Table 5-1. Two useful observations may be made from this table. The first is, of course, the enormous reduction in the size of the agricultural labour force over this 40 year interval. Manitoba and Alberta each had approximately 100,000 fewer workers in agriculture in 1981 than in 1941. Saskatchewan had 120,000 fewer. The second important observation is that the rate of decrease in the size of the agricultural labour force was much lower in Manitoba and Alberta between 1971 and 1981 than it was for previous decades, and was somewhat lower in Saskatchewan.

Unfortunately, strictly comparable statistics on the labour force are not available for inter-census years. However, other statistics which are available for the agricultural industry suggest that consolidation of farms, and implicitly reduction in the size of the

TABLE 5-1 AGRICULTURAL LABOUR FORCE,
PRAIRIE PROVINCES, 1941-1981

	Manitoba	Saskatchewan	Alberta
1941	144,413	208,507	182,930
1951	73,490	147,446	114,918
1961	59,301	119,237	103,573
1971	47,070	100,670	86,705
1981	42,350	86,985	82,755

Source: Census of Canada, 1961-1981

labour force, continued between 1971 and 1976 much as it had during the previous decades. Between 1976 and 1981, however, there was a marked slowing in the pace of consolidation with some of the statistics even indicating minor reversals of the trend. Number of farms and average size of farms in the three provinces are shown in Tables 5-2 and 5-3, respectively, for the 1961-1981 period.¹

The reasons for the consolidation process revealed in these tables are numerous and knowledgeable people may disagree on the importance of specific influences. Nevertheless, economies of scale, particularly in grain production, made possible by new types of equipment and larger versions of that equipment have had an important underlying influence during the past several decades. Since the early 1940s at least, the

TABLE 5-2 NUMBER OF FARMS, PRAIRIE PROVINCES, 1961-1981

	Manitoba	Saskatchewan	Alberta
1961	41,640	93,924	73,212
1971	33,849	76,970	62,702
1976	29,693	69,578	57,310
1981	29,097	67,318	58,056

Source: Census of Canada, 1961-1981

¹Some knowledgeable observers argue that these statistics mask a trend in which large full-time farmers continued to expand to the end of the 1970s while at the same time there was a substantial increase in part-time farmers and small, starting farmers.

TABLE 5-3 AVERAGE FARM SIZE IN ACRES,
PRAIRIE PROVINCES, 1961-1981

	Manitoba	Saskatchewan	Alberta
1961	420	686	644
1971	543	846	789
1976	627	939	864
1981	639	952	813

Source: Census of Canada, 1961-1981.

price of labour has risen more rapidly than the price of machinery and fuel. Farmers responded by substituting machinery for labour. The efficiency of the new agricultural equipment made it possible for each farmer to operate a larger farm, thus providing one incentive for expansion. Larger units of the new equipment provided even greater efficiency and further encouraged expansion.

It is also argued that the method for marketing wheat, using quotas based on the number of acres farmed, encouraged expansion as well because this was the main way a farmer could increase his sales of wheat.²

Since the late 1970s consolidation in agriculture in the Prairies has slowed substantially. This slowdown has coincided with several

² An historical analysis of the economics of wheat production is found in W. Hartley Furtan and George E. Lee, "Economic Development of the Saskatchewan Wheat Economy," Canadian Journal of Agricultural Economics, 25(3), 1977, pp. 15-28.

years of rising costs and, since about 1980, relatively stagnant prices for agricultural products. This period has also been characterized by relatively high real interest rates. Lower net income and higher real interest rates may have discouraged further expansion. It is also possible that farmers who acquired additional land holdings during the 1970s may want to fully retire any remaining debt before expanding further.

Communications

In non-agricultural sectors of the economy changes have also occurred which moved the pattern of production or the delivery of services from a dispersed method to a more concentrated one. Some of these changes would have been made regardless of the level of rural economic activity while others undoubtedly followed as a consequence of changes in rural activity.

One example of a reorganization that would have occurred in any case was the conversion from manual to automatic telephone exchanges with a small but definite loss of employment in small communities. As indicated in Table 5-4 these conversions were concentrated in the 1950s and 1960s. In each of the Prairie provinces this conversion has now been completed.

An example of a change which was itself likely caused for the most part by migration of people from rural areas was the closure of numerous rural post-offices with, again, a small but additional loss of rural

TABLE 5-4 DATES OF CONVERSION FROM MANUAL TO AUTOMATIC
TELEPHONE EXCHANGES, PRAIRIE PROVINCES

	Before 1950			1950-59			1960-69			1970+		
	MN	SK	AB	MN	SK	AB	MN	SK	AB	MN	SK	AB
Unincorporated	1	—	—	19	—	3	12	10	15	23	8	13
< 200	—	—	—	1	—	2	—	10	57	—	25	8
200 - 499	1	—	—	10	1	14	21	89	83	15	76	3
500 - 999	1	1	—	11	—	12	20	60	42	12	5	—
1,000 - 2,499	—	1	1	7	7	3	10	22	35	3	—	—
2,500 - 4,999	—	1	1	2	5	10	3	1	10	2	—	—
5,000 - 14,999	—	4	—	4	2	5	—	—	—	—	—	—
15,000 - 49,999	—	2	—	—	—	1	1	—	2	—	—	—
50,000 +	3	2	1	—	—	1	—	—	—	—	—	—
Totals	3	11	3	52	15	51	65	192	244	53	104	24

Sources: Records of Manitoba Telephone System, Sask Tel, and Alberta Government Telephones. Excludes Edmonton's municipal telephone system.

employment. In Table 5-5 post office consolidation in Saskatchewan³ is shown from 1950 to the present. Over half of the closures recorded were made during the 1960s with only an insignificant number made after 1980.

³Some of the information provided in this section is for Saskatchewan only. There are two reasons for this. In some cases historical records for Manitoba and Alberta, apparently, do not exist. In other cases they are not computerized but rather exist in a variety of different sources, sometimes in archives, sometimes elsewhere and are prohibitatively costly to collect when they are not the main focus of the research.

TABLE 5-5 POST OFFICE CLOSURES IN SASKATCHEWAN,
1950 TO PRESENT

Location	1950-59	1960-69	1970-79	1980+
Unincorporated Centre/Rural	36	228	157	11
Incorporated < 200	—	3	2	3

Source: Canada Post archives and Public Archives of Canada.

Schools

In each of the three Prairie provinces a process of consolidation involving both elementary and high schools began as early as the 1950s. Under these programs, small rural schools, often with several grades taught in only one or two rooms, were closed and students were bussed into a nearby community where better grade separation, more teachers and greater specialization was possible. In addition, numerous high schools in small communities were closed as regional high schools in locally central communities were developed. Several hundred schools were closed in Saskatchewan alone during this consolidation which was largely completed by the early 1970s. Some school closures continued beyond this date, however, as small populations and falling birth rates made continued operation of some smaller schools infeasible. In Table 5-6, an index of number of schools by location is provided for 1961 through 1981, again for Saskatchewan only. Once more, as shown in the table, this process was concentrated in the 1950s and 1960s with the period

TABLE 5-6 INDEX OF SCHOOLS BY LOCATION,
SASKATCHEWAN, 1961

1951 Base			
Location	1961	1971	1981
Unincorporated			
Centre/Rural	56	2	2
Incorporated			
< 200	108	70	47
200 - 499	124	101	113
500 - 999	115	180	155
1,000 - 2,499	188	329	379
2,500 - 4,999	130	330	330

Source: Saskatchewan Department of Education and Saskatchewan Archives.

following 1971 showing much greater stability.

Transportation

At one time most small communities were provided with rail service for all but the most local passenger or freight transport requirements. Today rail service to most small communities consists almost exclusively of the pickup of raw materials. Movement of nearly all other freight into and out of small communities is handled by truck, and rail passenger transport has long since been replaced by intercity bus lines and the private automobile. It is probably the case that the newer forms of transport provide services which are at least equal to those formerly offered by the railroads. But, however adequate the

substitution of one form of service for the other has been, there was, nevertheless, a definite physical presence with the railroad that has not been replaced by its successors. Removal of the station and platform, the roundhouse, the section-house and now, more selectively, elevators and even the railroad tracks create an impression of visible decline in the status of communities affected. Employment in the transportation industry appears not to have altered much in total although it is certainly the case that the loss of railroad jobs in communities that were division points, for example, has not been offset in those communities by increased employment in the intercity bus or trucking industries.⁴

Of probably greater importance than any factor other than farm consolidation in interpreting the evolution of the trade centre system has been the improvement in personal mobility of rural dwellers which was occasioned by upgrading the intercity road network coupled with an increase in automobile ownership. Between 1951 and 1971 the number of miles of paved roads in the Prairie provinces increased by a factor of 10. Over 40 percent of the paved intercity network and approximately one-third of the high quality grid roads were raised to their present standard during the 1960s. These improvements are shown in Table 5-7. In addition the number of persons per registered automobile in the Prairie provinces declined from approximately 4 in 1951 to well under 2

⁴Neither employment nor labour force statistics are available on a spatially disaggregated basis sufficient to determine the precise importance of the loss of railroad employment compared with the gain in motor transport industries.

TABLE 5-7 HIGHWAY AND RURAL ROAD MILEAGE BY TYPE,
PRAIRIE PROVINCES, 1946-1971

	Manitoba		Saskatchewan		Alberta	
	Paved	Gravel	Paved	Gravel	Paved	Gravel
1946	546	8,385	132	8,529	734	6,922
1951	802	8,413	754	15,152	1,193	17,274
1961	2,833	19,647	2,768	38,396	4,061	48,455
1966	3,138	28,161	5,259	54,852	5,561	57,895
1971	6,456	27,870	9,838	60,868	9,647	67,489

Source: Canada Yearbook, various issues. The figures are not strictly comparable from year to year because of changes in both coverage and definitions.

in the late 1970s.

These improvements have greatly increased the options available to the rural dweller as consumer, and have substantially altered traditional spatial shopping patterns. The classic trade centre system, in which consumers shopped for the desired item in the closest centre in which it was available, has altered as the preceding chapters have demonstrated. In the pattern which has evolved, rural consumers still purchase convenience goods at the closest available point, but, when forced to go beyond the immediate centre for goods which are not available there, tend to drive to the nearest place where a complete range of consumer goods is available. Often intermediate size communities which provide some of the items actually purchased in the larger, more distant centre are by-passed along the way. These changes in shopping patterns have enhanced the viability of larger, more

favorably situated regional shopping centres but have been generally detrimental for businesses located in smaller communities.⁵

Public Sector Expenditures

Until the early 1970s none of the three provincial governments had either an explicit regional development program or a trade centre system program.⁶ Provincial government departments were, and are, organized along functional lines.⁷ There were, of course, numerous programs designed to improve the well-being of rural dwellers, and these programs necessarily had a sub-regional impact. In most cases, however, the objectives of the programs were not explicitly designed to strengthen or to facilitate adjustment in the economy of an area of a province. More often, the objective was the satisfaction of selected functional criteria. The influence on the sub-regional economy was secondary and does not appear to have been a criterion that received systematic consideration.

Beginning in the early 1970s, however, each of the three

⁵ Shopping patterns of rural dwellers in the Prairie provinces were identified through the analysis of returned questionnaires sent to 2,500 people during the summer of 1971. Jack C. Stabler, Economic Effect of Rationalization of the Grain Handling and Transportation System on Prairie Communities (Saskatoon: Underwood McLellan and Associates, 1972).

⁶ Regional "planning" organizations existed in both Manitoba and Alberta prior to the 1970s but they had no direct control over the expenditure of any significant amount of funds.

⁷ The Department of Northern Saskatchewan, created in the early 1970s and dismantled in the early 1980s, represented an experiment in the coordinated delivery of provincial government programs within a spatial frame of reference.

provincial governments formulated and announced programs designed to expand employment in rural areas or to strengthen the economic or social attraction of rural communities. Under these programs some private investors were persuaded to locate in or adjacent to small communities, there was a limited decentralization of provincial government employment, public infrastructure in small communities was upgraded, etc. However, by this time the provincial governments had already taken those (unavoidable) steps which had contributed significantly to the changes described in previous chapters--consolidation of schools, hospitals, telephone systems and other government activity and the upgrading of the intercity road network.

Expenditures made under the provincial area development initiatives during the 1970s were not substantial and could not have had a significant influence on overall trends although they undoubtedly did benefit selected activities and some communities. These programs have expanded or contracted as provincial governments have changed and, apparently, receive lower priority in times of budgetary stringency.

As with provincial governments, most federal government departments are organized on a functional basis. To a probably greater extent than provincial governments, however, the federal government is sensitive to the regional allocation of its expenditures. The nature of the federal system demands that this be the case. The federal government's perception of regions, however, is apparently that they consist of provinces or groups of provinces rather than sub-regions within the provinces or rural areas versus urban. The programs of the various federal government departments may, of course, have an influence

on the sub-regions of the various provincial economies. It would not be possible to assess the impact of the numerous federal government programs in this respect for this study. Nevertheless, it seems reasonable to suggest that the impact of most federal government activity in the Prairie provinces has had an internal centralizing influence, for the same set of reasons advanced earlier in discussing the causes of centralization of private and provincial government activity.

One federal government agency, the Department of Regional Industrial Expansion⁸ does warrant specific consideration. Created in 1969, the primary objective of the department has been to initiate economic expansion in areas which have experienced prolonged periods of stagnation, evidenced by either persistently high rates of unemployment or slow growth resulting in people leaving the region. Under the program, all of southern Manitoba, selected areas in Saskatchewan, including Saskatoon and Regina, and parts of Alberta, excluding Calgary and Edmonton, were initially designated for Regional Development Incentive (RDIA) grants. Older programs such as those under the Agricultural Rehabilitation and Development Act (ARDA), which were directed toward agriculture and rural areas, were also taken over by DRIE. Other programs including Special ARDA, Special Area and General Development Agreements followed.

In Table 5-8 grants made under various DRIE programs between 1969

⁸The Department of Regional Economic Expansion was created in 1969. Its name was changed to the Department of Regional Industrial Expansion in 1983.

TABLE 5-8 DRIE GRANTS MADE IN THE PRAIRIE REGION BY
PROGRAM AND LOCATION OF RECIPIENT, 1969-1981

Figures in Current Dollars

Program by Location	Manitoba	Saskatchewan	Alberta
RDIA ¹			
Unincorporated	\$2,998,447	\$ 29,898	\$2,362,184
Incorporated			
< 1,000	1,718,528	1,645,425	1,060,397
1,000 - 4,999	9,624,241	5,390,402	5,088,420
5,000 - 49,999	52,431,857	7,363,502	7,729,847
50,000 +	77,912,647	17,516,152	2,977,961
Special Area ²	--	4,426,184	--
GDA ³			
Urban ⁴	--	3,039,000	--
Rural	--	10,216,897	--
EDP	10,024,764	--	--
ARDA--Special ARDA ⁵	35,318,112	25,425,844	--

¹ RDIA totals for Alberta include \$10.6 million under Nutritive Processing Subsidiary Agreements I and II with the Canada/Alberta General Development Agreement and was cost shared on a 50-50 basis.

² Meadow Lake Special Area in Saskatchewan.

³ Excludes planning and administration.

⁴ The GDA urban total in Saskatchewan was made to recipients in centres of 50,000+ population.

⁵ Excludes grants to Indian Reserves.

and 1981 are listed by geographical location of recipients.⁹ In each province, grants made to recipients in urban areas exceeded those made to recipients in rural areas. Further, within the urban systems, grants made to recipients in communities of the size under study totalled from under \$2 million in Saskatchewan to under \$5 million in Manitoba. Clearly investment opportunities were better in the larger cities but the expenditure pattern shown in Table 5-8 is one that would have contributed to centralization through strengthening the larger centres relative to the smaller ones.

CONCLUSIONS AND PROJECTIONS

The process of consolidation described in the previous chapters, with the attendant loss of labour in some rural activities and the transfer of jobs from rural areas to small centres or from small to larger centres, was unquestionably responsible for the decline of small communities between the 1940s and the mid 1970s. The influence of each activity differed from one period to the next but for many years the sequence of consolidation across activities was complementary so that as one effect diminished, another took its place.

More specifically, nearly 40 percent of the reduction in the agricultural labour force in the three provinces recorded in Table 5-1

⁹The information shown in Table 5-8 is based on data that was available from western provincial DRIE headquarters. Since each office maintains its records to suit its own requirements, formats differ and what is available from one office is not necessarily available from another. In addition some subjective judgement was required to allocate all but the RDIA grants to the categories shown in the table.

occurred between 1941 and 1951. Thereafter, the rate of decline, while substantial, was considerably lower until the late 1970s when it almost ceased. However, in the mid-1950s a process of consolidation in other private and public sectors began which was not completed until the early 1970s. Consolidation in communications, more centralized railroad operations, substitution of truck and automobile for rail transport, consolidation of schools and other public activities all resulted in less employment in rural areas and smaller communities generally and simultaneously contributed to the specific decline of those communities from which these facilities were removed.

The paving of the intercity highway system contributed to the decline of small centres indirectly in that it enhanced the mobility of rural dwellers and made it possible to extend the area within which shopping trips are made. The effect of the bypassing associated with an expanded shopping sphere was to transfer the demand for consumers and producers goods up the hierarchy to larger regional centres.

The effects of the consolidations and the change in shopping patterns appear to have run their course by the late 1970s-early 1980s. Agricultural consolidation has stopped or at least paused while the influences contributing to centralization of the other activities considered are probably completely exhausted. The population of all but the smallest and most poorly located centres has stabilized while the trade centre function of communities classified as minimum convenience centres has declined to the point where they generally provide only a corner grocery-gas bar service.

Further evolution of the trade centre system would appear to

depend on the agricultural industry primarily and secondarily on the transportation system. Further economies of scale in grain production are still possible¹⁰ but whether farmers will want to or be able to take advantage of greater productive efficiency through larger size depends on several factors all of which are unknown at this time. A rise in the price of grains coupled with stability in the cost of production could provide the means for additional expansion by grain producers. On the other hand the recent elimination of the Crowsnest Pass freight rates could lead to a more diversified and more intensive type of agriculture, thus reducing the incentive to expand land holdings.

With respect to rail transportation, continued operation of the existing network, within the context of conventional freight rate structures, would have little or no effect on the further evolution of the trade centre system. The abandonment of the occasional branch line or closure of a little used elevator in this environment would have no more effect than that previously noted. Widespread use of variable rates, however, could alter the present grain delivery system in a fundamental way.¹¹ It seems likely that numerous delivery points in the

¹⁰Furtan and Lee, *op. cit.* See also M. S. Fleming and I. H. Uhm, "Economies of Size in Grain Farming in Saskatchewan and the Potential Impact of Rail Rationalization Proposals," as well as W. Hartley Furtan and Richard S. Gray, "The Translog Production Function: Application to Saskatchewan Agriculture," *Canadian Journal of Agricultural Economics*, 30 (March 1982), 1-20 and 29 (March 1981), 82-86, respectively.

¹¹Under variable rates a few key delivery points would charge rates below those at the remaining points. The objective would be to centralize storage and handling and to ship in large volumes from fewer points. Delivery to such key locations would involve an increased amount of farm to elevator delivery by truck transport.

vicinity of the those charging lower rates could quickly become non-competitive with substantial, geographically concentrated, closures of elevators a possibility.

If there is only limited further consolidation in agriculture and if the railroads do not utilize variable rates, it is very likely that the trade centre system in place at the present time will continue with only modest changes. Over the next 10 years these changes can be subjectively forecast to involve the loss of the very few higher order consumers services and the few remaining producers services still offered by minimum convenience centres. Populations of minimum convenience centres would remain reasonably stable and the grocery-gasoline services would still be provided. Full convenience centres too would likely lose their higher order consumer services through time and gradually evolve into rather strong minimum convenience centres selectively continuing to provide some producers services. Their populations could well increase especially if the trend to more producers locating in them were to continue. The 78 centres identified as complete shopping centres in 1981 would most likely grow in population and at least remain stable in terms of the trade centre role they now perform.

If, on the other hand, consolidation in agriculture were to return to the pace experienced during the 1960s the gradual adjustment described in the previous paragraph would accelerate and some of the smallest of the centres now extant would probably expire. It is unlikely that the role of the partial shopping centres would alter even under this scenario, however.

It is not possible to forecast what the consequences would be if the railroads were to utilize a system of variable rates. We have no experience with adjustments of the type that could follow the implementation of variable rates nor have there been any systematic studies conducted of their possible influences. It does not seem likely, however, that any subsequent adjustments would have detrimental effects on communities of the partial shopping centre category and above although it seems best to reserve judgement on the possible impact on places smaller than partial shopping centres.

ADDENDUM**ASSESSMENT OF THE IMPACT OF ALTERNATIVE METHODS
OF PAYMENT ON SMALL COMMUNITIES
IN SASKATCHEWAN****INTRODUCTION**

In the discussion of the impact of changing the Crow rate, a great deal of the discussion was focussed on the loss of income to the producer because of higher shipping costs and the effect that the loss of this income could have on the small communities that serve the rural economy. While possibly a correct interpretation of the short-run effect, this perspective would seem to ignore the possible medium term responses that could occur in the agricultural sector.

It is quite possible that higher shipping costs for products previously shipped under the Crow rate could, in the medium term future, lead to a change in the composition of output in the agricultural sector, a more intensive utilization of the land base and more processing in the Prairie region. If this type of response were to occur, it is possible that agricultural incomes could in fact increase.

In the grain handling and transportation system, on the other hand, higher shipping costs would encourage the use of the most economical methods of delivery to the elevator. If this were to take the form of larger and longer hauls, it could lead to an acceleration of branch line abandonment and a more rapid consolidation of the grain elevator system. The charging of variable rates could lead to a similar

consolidation.

Higher freight rates, a more centralized grain handling and transportation system, greater diversification in the agricultural sector coupled with more specialization at the individual farm level all have implications for the occupational and locational requirements for labour in the agriculture, grain handling and transportation industries. The demand for agricultural implements and supplies in terms of amount, variety and location could also be affected. Rural population distribution, level and distribution of agricultural income and thus rural dwellers' demand for consumer goods would likewise be influenced.

Any and all of these possible responses to western grain transportation policy changes have been perceived as affecting the economic viability of rural communities in the Prairie region. Some of the effects could be positive, such as the increase in agricultural incomes, others possibly negative, such as a more rapid consolidation in the grain handling and transportation system. The composition, magnitude and incidence of these effects could be expected to vary with the method chosen to pay the federal government's share of grain transportation costs.

One aspect of the possible consequences following from the Western Grain Transportation Act is investigated in this Addendum. It is the assessment of the impact of the various methods of payment on small Saskatchewan communities.

IMPACT OF ALTERNATIVE METHODS OF PAYMENTS ON SMALL SASKATCHEWAN COMMUNITIES

In order to assess the impact of the various methods of payment on small Saskatchewan communities, it is useful to first recall their functional profiles. These were provided in Tables 4-5 and 4-6 where the average number of businesses in communities of each functional type were identified.

It is apparent from these tables that minimum convenience centres play a very limited commercial role in the Saskatchewan space-economy. Nevertheless the majority of these centres do have elevators and are therefore delivery points. In addition there were 61 implement dealers and 46 outlets selling building materials in the 381 minimum convenience centres in 1981. These firms obviously provide a service to the agricultural industry. Beyond this, however, these communities function as local convenience centres offering only basic consumer goods and services much as the small neighborhood shopping centre does in an urban setting.

Most of the 130 full convenience centres and all of the 38 partial shopping centres have several businesses that serve the agricultural sector directly as well as providing an expanded range of consumer goods and services.

Changes in the volume or mix of agricultural production could potentially have an impact on the communities in the two largest functional categories directly and on all communities indirectly through changes in net farm income out of which consumption purchases are made.

In order to develop some indication of the effects the various

MOPs would have on these communities, the estimates of livestock and grain production in Saskatchewan developed by Agriculture Canada for the WGTA, the 50:50 and the Compensatory options were obtained. All production was priced in 1984 dollars and the resulting values of production figures were used in conjunction with an input-output model of the Saskatchewan economy to simulate purchases by the agricultural industry under each of these options. The production and prices used for these simulations are shown in Table A-1.

In all options, WGTA, 50:50 and Compensatory, the forecast value of 1995/96 production was greater than the 1983/84 actuals. Thus the projected impact on the Saskatchewan economy was positive in all cases. The greatest impact was projected under WGTA and the smallest under the Compensatory option. In percentage terms the forecast purchases of intermediate inputs by the agricultural sector from all industries in Saskatchewan was, in real terms, 20 percent above the 1983/84 actuals under the WGTA baserun. Forecast purchases were 16 percent above 1983/84 actuals under the 50:50 option and 12 percent above 1983/84 actuals under the Compensatory option. Forecast purchases by agriculture from all sectors of the Saskatchewan economy under these options are shown in Table A-2.

In addition to the purchase of intermediate inputs identified in Table A-2, final payments by agricultural such as wages and salaries, net income of unincorporated business and other operating surplus would increase and provide the means for additional expenditures for both

TABLE A-1 PRODUCTION AND PRICES USED FOR MOP SIMULATIONS¹

1983/84 Actuals					
Q		P	Q		P
Grains			Livestock		
Wheat	15.62	\$183.32	Hogs	86.45	\$70.38
Barley	2.61	103.44	Beef	2,483,200.00	74.22
Oats	0.65	99.04			
Canola	1.09	398.15			
Flax	0.14	307.86			
Rye	0.34	104.66			
1995/96 Estimates					
Baserun		50:50		Compensatory	
Grains					
Wheat	19.35	\$183.32	19.61	\$175.17	19.88 \$166.40
Barley	3.62	103.44	3.45	92.20	3.30 86.91
Oats	0.39	99.04	0.39	92.10	0.42 84.73
Canola	1.10	398.15	1.10	386.98	1.10 375.29
Flax	0.26	307.86	0.26	298.76	0.26 289.66
Rye	0.45	104.66	0.45	99.08	0.45 93.16
Livestock					
Hogs	96.33	\$70.38	102.51	\$69.20	109.92 \$68.09
Beef	2,104,900.00	74.22	2,279,500.00	73.63	2,502,600.00 73.07

¹ Grain production in tonnes. Hog production in million pounds warm dressed. Beef production in CWT live. All prices are in 1984 dollars.

TABLE A-2 FORECAST INCREASE IN 1995/96 PURCHASES BY
SASKATCHEWAN AGRICULTURE SECTOR OVER 1983/84
ACTUALS UNDER ALTERNATIVE MOPS (1984 dollars)

Sector	WGTA	50:50	COMP.
Agriculture	19,774.1	15,708.3	11,529.0
Forestry	39.7	31.5	23.1
Metal Mines	47.6	37.8	27.8
Minerals Fuels	876.4	775.6	569.3
Non-Metal Mines	2,706.9	2,150.4	1,578.2
Services Incidental to Mining	7.9	6.3	4.6
Food and Beverage	4,794.7	3,808.8	2,795.5
Leather Industry	7.9	6.3	4.6
Textile Industry	15.9	12.6	9.3
Wood Industry	246.1	195.5	143.5
Metal Fabricating	381.1	302.7	222.2
Machinery Industry	428.7	340.5	249.9
Transportation Equipment	31.7	25.2	18.5
Electrical Machinery Products	7.9	6.3	4.6
Non-Metallic Minerals	55.6	44.1	32.4
Chemical and Chemical Products	142.9	113.5	83.3
Construction Industry	10,589.6	8,412.2	6,174.1
Transportation and Storage	1,309.8	1,040.5	763.7
Communication	3,929.4	3,121.5	2,291.0
Electrical Power, Gas	7,493.7	5,952.9	4,369.1
Wholesale Trade	6,120.4	4,861.9	3,568.4
Retail Trade	4,628.0	3,676.4	2,698.3
Other Finance Industry	25,124.4	19,958.5	14,648.4
Education and Health	182.6	145.0	106.5
Amusement and Recreation	95.3	75.7	55.5
Services to Business Management	333.4	264.9	194.4
Accommodation and Food Services	571.6	454.0	333.2
Other Personal Services	190.5	151.3	111.1
Transportation Margins	1,905.2	1,513.4	1,110.8
Operating, Office & Lab Equipment	13,590.2	10,795.9	7,923.6
Travel and Advertising	7.9	6.3	4.6
All Other	15,971.7	12,687.7	9,312.1
Totals	121,708.6	96,683.9	70,960.5

consumption and investment.¹ In 1995/96 these payments would total approximately \$516 million, \$410 million and \$301 million (1984 dollars) over the 1983/84 actuals for the WGTA, 50:50 and Compensatory scenarios respectively based on the relationship between these final payments and gross outlay of 65 percent from the Saskatchewan input-output model.

While growth of the agricultural sector in Saskatchewan is forecast for all MOPs, the ranking of the impacts is reversed compared with the Prairie region as a whole where the greatest stimulus is forecast under Compensatory rates and the lowest under WGTA rates. The reverse impact for Saskatchewan occurs because of its much greater production of crops and much lower production of livestock compared with the regional mix. Thus for Saskatchewan, the fall in the value of grain production is greater than the increase in the value of livestock production as rates move from WGTA to 50:50 or the Compensatory options.

By the same token, since more than half the region's grain production is accounted for by Saskatchewan, over half of any Crow Benefit Payment would be received by Saskatchewan producers. To use the frequently mentioned figure of \$659 million dollars for illustration, Saskatchewan producers would receive approximately \$356 million, on the basis of historical shipment, under the Compensatory option and \$178 million under the 50:50 option. However, under the arrangement by which

¹In the input-output terminology, final payments refer to payment for non-produced inputs. Thus wages and salaries are paid for farm employees; net income of incorporated business and other operating surplus refers to receipts after purchase of produced inputs, payment for labour and payment of taxes by unincorporated and incorporated farmers, respectively. Roughly, final payments may be thought of as "income less interindustry purchases."

TABLE A-3 FINAL PAYMENTS AND CROW BENEFIT PAYMENTS 1995/96
(1984 dollars)

	WGTA	50:50	Comp.
Income Less Interindustry Purchases*	515	409	301
Crow Benefit Payment	0	115	231
Total	515	524	532

*See the footnote on page 7.

the Government of Canada has committed to pay this sum, the real value of the federal contribution will decline through time. That is, with the producer paying the first 6 percent of any inflationary increase in rates after 1986 the real value of the federal government's contribution will diminish. For example if inflation were to average 4 percent per year between 1983/84 and 1995/96, the \$356 million (nominal dollars) that Saskatchewan producers would receive under Compensatory rates would in 1995/96 equal \$231 million 1984 dollars while the \$178 million nominal payment under 50:50 rates would equal \$115 million 1984 dollars. In Table A-3, total final payments and Crow Benefit Payments are compared under each MOP option.

The figures in Table A-3 can provide only the roughest kind of comparison. Net income is only a portion of final payments whereas the Crow Benefit Payment would likely be treated as personal income and taxed accordingly. The real question is where the decline in net farm income associated with moving from WGTA to the 50:50 or Compensatory

options would be less or more than the after tax increase in personal income associated with the Crow Benefit Payment. Analysis of that question is beyond the scope of this paper. Thus, for the region as a whole, the Compensatory option would appear to be an attractive alternative, even without regard to Crow Benefit Payments. Inclusion of the Crow Benefit makes the Compensatory option even more attractive. For Saskatchewan, however, it is not clear which is the preferred alternative.

With respect to the impact on small communities, purchase of intermediate inputs and total final payments would increase at approximately 1.7 percent per year in real terms under WGTA rates and at just under 1.4 and 1.1 percent per year with 50:50 and Compensatory rates respectively, disregarding any Crow Benefit Payments. When Crow Benefit Payments are included, purchases of intermediate inputs would not change (under the assumption that Crow Benefit Payments would be treated and spent as personal income) but income received by producers would increase by some undetermined amount under the 50:50 and Compensatory options and at least partly, perhaps fully, offset the decline in final payments under these options.

Rates of growth of the magnitudes mentioned in the previous paragraph compare favorably with increases experienced by Saskatchewan's agricultural sector since the mid-1970s. Further, approximately one-half of the entries in Table A-2 represent the type of transactions that would be provided, to some extent, by firms in the full convenience and partial shopping centre categories.

In addition, the increase in final payments discussed earlier and

identified in Table A-3 would lead to increases in consumption and investment expenditures on goods and services provided by all small communities. Thus it seems reasonable to conclude that the increase in agricultural production and incomes over the 1983/84 base would, under all MOPs, the WGTA and the pay-the-producer methods alike, provide a modest stimulus to the demand for goods and services offered by small communities.

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